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# LEGACY OF THE FLOOD OF '93. A WORKING CONFERENCE ON THE OCCUPATIONAL AND ENVIRONMENTAL HEALTH AND SAFETY ISSUES HELD IN ST. LOUIS, MISSOURI ON APRIL 11-13, 1994

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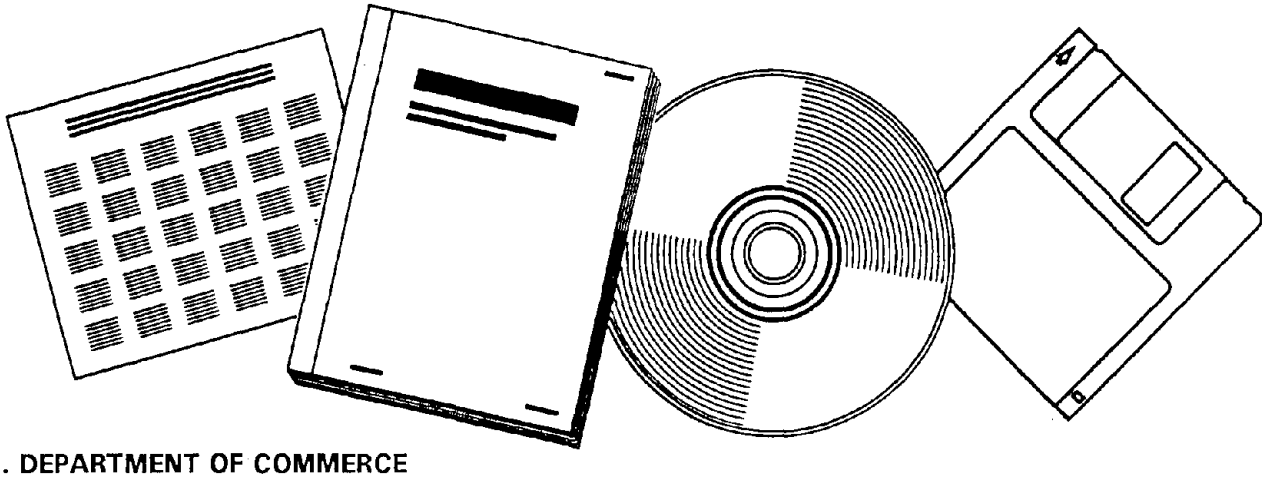

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

# The Legacy of the Flood of '93

## *A Working Conference on the Occupational and Environmental Health and Safety Issues*

**St. Louis, Missouri**
**April 11-13, 1994**

Sponsored by

Great Lakes Center for Occupational and Environmental Health and Safety,
University of Illinois at Chicago

and by

The Federal Office of Rural Health Policy
Iowa State University Extension
Kent State University
The National Farm Medicine Center, Marshfield, Wisconsin
The National Institute for Occupational Safety and Health
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Center for Agricultural Disease and Injury Research, Education, and Prevention
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# Contents

# Acknowledgments

This working conference was a call to action. It brought together public health and the agricultural Extension Service; federal, state and local governments; and private and public organizations to evaluate responses to the flood of 1993 and prepare for the future. Participants were asked to develop integrated service teams with other participants from their states and to establish a cooperative network for sharing information and expertise throughout the affected states.

Eight states affected by flooding were represented: Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, and Wisconsin. More than eight federal agencies and two regional agencies were also represented.

Activities conducted during the three-day conference included presentations by federal and regional agencies, panel discussions, and state and issues work group sessions. Thanks are due to the following individuals for their contributions in planning the conference: David Baker, University of Missouri; Larry Chapman, University of Wisconsin; Gayle Olson, Iowa State University; Steve Reynolds, Julie Sessions, and Risa Lumley, University of Iowa; Ted Scharf and Gene Freund, National Institute for Occupational Safety and Health; Paul Gunderson, National Farm Medical Center; and Colleen Hennessy and Alice Adams, Center for Rural Health Policy, Department of Health and Human Services.

# About the Report

This report presents the edited remarks made at the conference "The Legacy of the Flood of '93" held on April 11-13, 1994, in St. Louis, Missouri, along with summary recommendations made at the completion of the event. The conference was funded by the U.S. Department of Health and Human Services, Health Resources and Services Administration and the Illinois Department of Public Health, Environmental Health Section; it was coordinated through the Great Lakes Center for Occupational and Environmental Health at the University of Illinois at Chicago.

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# Summary of Issues

The following issues highlight some of the major concerns addressed during the conference:

• Recovery from the economic and stress impacts of the flood is estimated to require five years.

• Intermediate- and long-term flood recovery efforts are still underway throughout the affected region. The parameters for the recovery are not yet fully determined.

• Several issues identified during the Iowa Flood Response Workshop [held in November 1993] remain critical concerns for the recovery: (1) identifying problems and needed services; (2) augmenting existing services to respond to the increased needs; (3) communicating and coordinating between agencies engaged in flood recovery: and (4) maintaining services as disaster relief funding winds down.

• Both the physical and organizational work environments of disaster response workers are unpredictable, hazardous, and subject to sudden change.

• Inter- and intraagency federal communication pathways failed during the flood recovery, whereas informal communication pathways were effective.

• Disaster relief agencies should agree on a single, common application form and should cooperate in "one-stop" offices for disaster relief application and services.

• A faster and more effective system of communication and coordination is necessary if federal agencies are to respond to disasters in a timely fashion.

• A list serve-based discussion list, Flood-L, created at the University of Missouri-Columbia will facilitate day-to-day communication between flood recovery workers throughout the nine-state region, and the Flood-L archive will store relevant, peer-reviewed information for retrieval via E-mail.

• In the current disaster, interventions have been engaged before the problems were fully identified. Evaluations of early interventions should be collected from throughout the disaster region; a comparison of their relative efficacies can lead to incremental improvements in the general approach to the recovery. Further, as surveillance and evaluation data become available, it will be important to move toward interventions that qualify as secondary or primary prevention, rather than the tertiary efforts currently underway.

• The Farm Partners in Iowa program (funded by the National Institute for Occupational Safety and Health) and Roger Williams's Wisconsin farm family support network are two efforts designed to keep treatment for distressed farmers and their families within the rural community. These programs take a comprehensive approach to farm family problems and appropriate solutions.

• David Hinds, a local government expert in Madison, Wisconsin, has proposed establishing an infrastructure and disaster response network of state and county social services, ready to take action when disasters occur.

Some of the implications, then, of these issues for occupational safety and health in agriculture are as follows:

• The number of hired workers on larger farm operations in the Midwest may increase.

• The presently unstructured organization of disaster response and recovery work should be studied more systematically.

• Efforts should move from the model of tertiary prevention and treatment to more proactive secondary and primary prevention efforts.

• A number of roles in disaster response and recovery can be envisioned: providing direct services; providing information; doing systematic surveillance of disaster-related problems; evaluating ongoing interventions; coordinating interventions and other services; identifying unmet needs and service gaps; integrating successful interventions into extant services; and developing an infrastructure of disaster relief.

# Agenda

**MONDAY, APRIL 11, 1994**

*Welcome and Call to Action*
**Daniel Hryhorczuk**, Director, Great Lakes Center for Environmental and Occupational Health and Safety
**John Plunk**, Deputy Director, Illinois Emergency Management Agency
**Jerry B. Uhlmann**, Director, Missouri State Emergency Management Agency

*Call to Action*
**Stephen J. Reynolds**, Assistant Professor, Department of Preventive Medicine and Environmental Health, University of Iowa

*Responding to the Call*
**Kevin Tonat**, Assistant to the Director, Office of Emergency Preparedness/National Disaster Medical Systems, Department of Health and Human Services

*Responding to the Call: Interagency Panel*
**Janice Barrier**, Occupational Health and Safety Administration, Region VII
**Richard Niemeier**, Director, Division of Training and Manpower Development, National Institute for Occupational Safety and Health, Centers for Disease Control
**Josephine Malilay**, Division of Environmental Hazards and Health Effects, National Center for Environmental Health and Injury Control, Centers for Disease Control
**Gary McClure**, Federal Emergency Management Administration, Region VII
**Jim MacDonald**, Environmental Protection Agency, Region VII
**Jerry Newcomb**, Agricultural Stabilization and Conservation Services, U.S. Department of Agriculture
**Bradley K. Rein**, Extension Service Agricultural Programs, U.S. Department of Agriculture
**Kevin Tonat**
*Moderator*: **Colleen Hennessy**, Public Health Analyst, Federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Public Health Service

*Flood Tour Preview*
**Bob Miller**, Community Development Specialist
**David Baker**, Assistant Program Director, Agricultural Extension, University of Missouri—Columbia
**Melvin Myers**, Special Assistant to the Director, National Institute for Occupational Safety and Health, Centers for Disease Control
*Moderator*: **Paul Gunderson**, Director, National Farm Medicine Center and Education Foundation

*Tour*: Mississippi and Missouri Floodplain
**David Baker** and **Rich Hoorman**

**TUESDAY, APRIL 12, 1994**

*Responding to the Call*
**Stephen J. Reynolds**
*Moderator*: **Gayle Olson**, Community Development Specialist, Iowa State University Extension

*Plenary Session*: The Experiences of State and Local Disaster Response Efforts

*Illinois*
**Mel Bromberg**, Extension Associate, University of Illinois Cooperative Extension Service
**Roger Hannan**, Farm Resource Center

*Iowa*
**Margaret VanGinkle**, Iowa State University Extension

*Minnesota*
**John Kerr**, Assistant Director, Planning Branch, Division of Emergency Management

*Missouri*
**Paul Schleer**, Deputy Director, Missouri State Emergency Management Agency

*South Dakota*
**Gary Whitney**, Division Director, Division of Emergency Management

*Wisconsin*
**Roger Williams**, Associate Professor and Chairman, Health and Human Issues, University of Wisconsin—Madison

*Issues Workshops*
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Emergency Services/Disaster Response
Environmental Health Services
General Safety Services
Information Services and Communication
Mental Health and Social Services and Crisis Counseling

*Luncheon Address*: The Great Flood of '93—Social-Economic Impacts
**Pam Helmsing**, Editor, Doane Agricultural Services Co.

*Concurrent Workshop*
Promoting Federal Interagency Cooperation: Forming Integrated State Responses
*Facilitator*: **Bradley K. Rein**
Teamwork: Developing Integrated State Responses
State-by-state breakout sessions

*Plenary Session*: Reporting Back From Workshops

**WEDNESDAY, APRIL 13, 1994**

*Establishing a Flood Response Network and Clearinghouse*
**Alice Adams**, Lister Hill Health Policy Fellow, University of Alabama at Birmingham
**Floyd Davenport**, Illinois Cooperative Extension Service, University of Illinois at Urbana-Champaign
**Colleen Hennessy**
**Pierce Jones**, Department of Agricultural Engineering, University of Florida
**Gene Freund**, National Institute for Occupational Safety and Health, Centers for Disease Control
**Bill McFarland**, Director, Extension, Technology, and Computer Services, University of Missouri
**Richard W. Niemeier**
*Moderator*: **Ted Scharf**, Division of Biomedical and Behavioral Science, National Institute for Occupational Safety and Health, Centers for Disease Control

*Putting it Together*
**David Hinds**, Local Government Specialist, Associate Director, Cooperative Extension, University of Wisconsin—Madison
**Janet F. Ivory**, Administrator, New York Center for Agricultural Medicine and Health
*Moderator*: **Larry Chapman**, Associate Scientist, Department of Agricutural Engineering, University of Wisconsin, Madison

*Concurrent State-by-State and Federal Workshops*

*Putting It Together: Prospective Issues Workshops*

*Closing Plenary Session*: Preventing Illness and Injury and Improving Disaster Response Services
*Moderator*: **Colleen Hennessy**, Federal Office of Rural Health Policy, Health Resources and Services Administration

*MORNING*

# Monday, April 11, 1994

**DANIEL HRYHORCZUK:** Good morning, and welcome to our working conference on "The Legacy of the Flood of 1993," which will address the occupational and environmental health and safety issues of this natural disaster. I'm Dan Hryhorczuk, the director of the Great Lakes Center for Environmental and Occupational Health at the University of Illinois [at Chicago], which is the lead sponsor of today's conference.

This working conference is a call to action. It's intended to assist Public Health; agricultural Extension Service; federal, state, and local governments; and private and public organizations to evaluate responses to the flood and to prepare for renewed flooding in 1994 and the future.

You will be asked to participate in developing integrated service teams within your states as well as establishing a cooperative network for sharing information and expertise throughout the affected states. To this end, eight states affected by last year's flooding are represented: Illinois, Missouri, Iowa, Wisconsin, Minnesota, Kansas, Nebraska, and South Dakota. Also represented are more than eight federal agencies and two regional agencies responsible for flood response.

It is our hope that this conference will further link efforts in responding to disasters and coordinating the management of this response. Through the Illinois Department of Public Health, we at the Great Lakes Center are engaged in research on environmental and occupational health consequences of last year's flooding. Specifically, we do research on GIS mapping of flood-related health effects, carrying out epidemiologic studies, looking at bioaerosol contamination and respiratory disease, and developing a surveillance system for occupational health hazards in the National Guard.

Another goal of this conference is to develop an electronic network for sharing information and expertise throughout the affected states. An electronic flood network has been established to promote and extend working relationships in communication between attendees and targeted agencies. As you will note, this conference is being video- and audio-recorded so that those unable to attend will have an opportunity to benefit electronically from the work done in these next three days.

Finally, I want to recognize and thank the members of the planning committee and their organizations for fashioning this meeting. Specifically I would like to thank Dave Baker, from the University of Missouri; Larry Chapman, University of Wisconsin; Gayle Olson, Iowa State University; Steve Reynolds, University of Iowa; Julie Sessions, University of Iowa; Risa Lumley, University of Iowa; Ted Scharf and Gene Freund from the National Institute for Occupational Safety and Health; Paul Gunderson from the Marshfield Clinic in Wisconsin; Leslie Nickels, Dick Lyons, and Ernestine Love from the University of Illinois; and Alice Adams and Colleen Hennessy from the U.S. Center for Rural Health Policy.

It's my pleasure to now introduce John Plunk, assistant director of the Illinois Emergency Services and Disaster Agency. Mr. Plunk has been with IESDA for twelve years. He served first as a Region VI coordinator in Jacksonville and then moved to Springfield, where he was the chief of operations. He served as acting director of the agency in 1990 and again from 1992 to 1994, including the period of the great flood.

**JOHN PLUNK:** Thank you very much. I got up this morning in Springfield, Illinois, where I live, and drove down [to St. Louis]. It was raining when I left and continued to rain harder, and as I passed the creeks and the fields I got an uneasy feeling. Before the flooding that feeling didn't happen. It rained a couple of days in a row, two or three inches, and it was a minor inconvenience to your weekend plans. But it's still too soon for any of us to feel very comfortable whenever we get more than a brief shower. I have been with the agency for about 12 years and I have had the occasion to speak to many, many groups all over the state and the country on emergency planning and disaster preparedness. I used to point out to my audiences that Illinois had never experienced a disaster. A lot of people thought we had. A lot of homeowners were pretty sure they had experienced a disaster, and indeed some towns and some counties had, but there was nothing that the entire state had been really stressed out with. Obviously I can't say that any more. The great flood was truly our first disaster.

I remember being in the town of Grafton, just above St. Louis, on July 4. The previous flood in that little river town had occurred in 1973. The flood of record was 33 feet, and the projections were that on July 6th there would be a crest of 32 feet, one foot below the previous record. But it was not until August 6th that the river crested at Grafton at a record 39 feet, 6 feet above the previous flood of record.

That was pretty much the story of the flood for us; it seemed that there was never going to be an end to it. Just when we had things under control and the levees in a situation where we could hold them, our friends to the north in Iowa got more rain, the river got larger, the levees got weaker, and we had to redouble our efforts. By mid-August we were quite sure that we would be spending Christmas on those levees.

In Illinois and Missouri we have for many years been preparing for a catastrophic disaster. We knew it was going to be that earthquake, and that was what we had been planning for. In Illinois we hadn't given much thought to catastrophic flooding. We had fought floods in '73 and we had fought floods on the Illinois and Mississippi. We even fought an underground tunnel flood in Chicago and we thought we had pretty much seen it all. You know, two to three hundred thousand sandbags wouldn't be any big deal.

In fact, on the night of July 5 I talked for ten or fifteen minutes with Governor Jim Edgar and General Don Lynn debating whether we should activate 150 National Guard troops for Adams County or 200. And finally we decided we would just pull out all the stops and put 200 on. Well, before it was all over with, we had 7,000 National Guard troops activated, and we've still got troops on duty today in several towns along the Mississippi.

We have learned a lot of lessons. We have everybody's attention when it comes to emergency management. We impacted virtually every state agency, including agencies that we previously had little experience with. Virtually every state agency is now involved in emergency management and in disaster planning because we know now that what happens to one of us eventually happens to all of us. When we talk about the legacy that this flood is going to leave, I think that will be one of the good outcomes. I hope that we look back years from now and see that the floodplain has indeed changed. We are in the process, with FEMA [Federal Emergency Management Agency] help, of buying out many of those communities, moving many of those homes out of the floodplain all together, and returning much of that land to the river. And I think that is probably the correct thing to do, though I am glad that I don't have to make that decision, because I know it is a very sensitive political issue to the agriculture industry, which has had the benefit of those fertile fields for many, many years. But maybe it is time that we begin looking at mitigation as a national agenda. I think that is what FEMA is doing now, and we applaud their efforts at that.

The key to success at this conference is going to be cooperation among the agencies in your state and among the federal agencies. I am glad to see so many of you represented here, because that is going to go a long way toward making certain that all of the lessons we learned last year aren't forgotten. In 1973, the previous flood of record on the Mississippi, we looked around for anybody who had been there before; we couldn't find anybody in state government, we couldn't find anybody in the federal government. This time we must pass our lessons along, keep those ideas alive and fresh, so we don't leave the people who succeed us without knowledge.

**DANIEL HRYHORCZUK:** It is my pleasure to next introduce Jerry Uhlmann, a director at the Missouri State Emergency Management Agency. He is a thirty-two-year veteran of military service and has held several key positions in the Missouri Army National Guard. For more than ten years Mr. Uhlmann has been responsible for planning military support to civil authorities and National Guard support in state emergencies. As director of the Missouri State Emergency Management Agency he directed the response and recovery efforts for the great flood of 1993. He was appointed chairman of the Governor's Floodplain Management Task Force. The task force was charged with examining long-term floodplain management issues in Missouri and making management recommendations.

**JERRY UHLMANN:** Thank you. I was going to say that if there is one bright spot for the future it is that we are below-normal in rainfall for 1994, but with the five-inch monsoon this weekend I better retract that. John mentioned the earthquake; that is one of our big threats, and we spent a lot of time in preparing for it. But the wettest year in history, prior to 1993, was 1811, and you know what happened in 1812.

Even though this event was horrendous, there were some humorous aspects. Shortly after the disaster started, I was in our emergency operations center and got a call from someone in New Jersey. And he says, What needs to be done is that Missouri needs to get all of the boats that you can, anchor them in St. Louis, rev up the motor, and get that water down to the Gulf of Mexico as quick as possible. Then you wouldn't flood on the Missouri and Illinois side. And apparently he was serious, because he paid for the call.

Then there was a youngster who said he was somewhat confused: he has seen a hundred-year drought and a five-hundred-year flood, and he is only ten years old. I guess that would confuse a person.

But the effects of this flood will be felt throughout the Midwest for years to come. There is really no way of knowing just what the full effects will be in terms of

human, economic, and resource needs. We have put in a lot of effort at the state level to see what will be the long-term repercussions of this disaster.

Too often in the past we, especially in the emergency management arena, put most of our effort in the response phase. Who is going to respond? How are we going to coordinate all these activities? And we developed all of our plans in that realm. But if there is one thing that I have learned in this disaster, it is that the real priority needs to be in the recovery—not to slight the response, but the recovery is ten times worse than I ever anticipated in the magnitude and the complexity that we are involved with. The response phase is where all the heroics are seen in media attention and public attention—everybody is enthused, the adrenaline is flowing. Everybody has a lot of sympathy for the victims, and response comes more or less automatically. But now that we are getting into the recovery phase, the story is different. It is more complex, and a lot of organizations that were very active and willing to give additional personnel to support the disaster are kind of going back into their day-to-day activities. So it is more difficult to muster enthusiasm in recovery, and that is something we are going to have to take a look at.

One of the other action lessons learned in this disaster, at all levels of government and in both the public and private sectors, was the need for more planning for recovery. FEMA develops the federal response plan, which outlines how federal agencies are going to respond and coordinate among themselves. We are going to begin seeing more information on recovery in that federal response plan.

The recovery phase is when we try to help people put their lives back together, try to mitigate the stress and health problems that have occurred and will continue as a result of the disaster. We have had reports in Missouri of a lot more child abuse cases, battered wives, and emotional problems with schoolchildren. We can't really tie those directly to the flood, but there is a marked increase, and we have to assume that the flood contributed significantly.

In Missouri we have more than 14,000 people who are still displaced, and when families are living with relatives, friends, or neighbors, that creates a certain amount of stress. And a lot of schoolchildren are having to go to another school, which compounds their problems.

In January, realizing that we were getting notification of a lot of unmet needs at the local level, particularly in the rural areas, the governor started a partnership committee comprised primarily of relief organizations, volunteer organizations, and government agencies to identify what the problems are and what can be done. In our urban areas the mechanisms are pretty clear. People know where the established offices are, and it works fairly well. But many in our rural areas are not accustomed to requesting assistance; they are more self-reliant. So we found bigger problems in our rural communities, that we had a lot bigger problems, and that is what the partnership committee is addressing.

We cultivated, as much as possible, old relationships and new technology to dispense and gather information. We found the teleconference very useful as a way to conduct business. The Internet service available through University of Missouri Extension proved to be very effective in distributing and gathering information on the flood, especially in the rural areas. We have found these new means of communication quite useful in building a spirit of teamwork and cooperation.

In October of '93 we were conducting a lot of meetings and getting input from several organizations throughout the state, from citizens, and through various other means on flood-related situations. That month the Governor created the Task Force on Floodplain Management. Our primary areas of concern were relocation, floodplain usage, levees, and legislation. Under the relocation buyout program, we were wanting to get as many people out of the floodplain as possible. In Missouri we unfortunately have too many people living in the floodplain, so this was a means to get those people out. Fifty-five communities have expressed an interest; thirty-four have been approved and are in the process of being bought out. So we hope that future floods will create many fewer victims.

Floodplain usage is another area where we need additional attention in Missouri. In the past we have not done a real good job in managing our floodplains, in having a system to determine what can go in and what should be kept out, as far as construction, hazardous materials, and the like.

Probably our single biggest problem is the levee situation. Out of 1,450 levees, more than 800 were damaged, creating big problems, especially on the Missouri River. Many of our communities and many of the farmers and the levee districts did not have sufficient money to repair those levees. Many of them, unfortunately, did not participate in the Corps of Engineers program, so they couldn't get corps assistance.

We are trying to enact legislation that will make it easier for the levee districts to get into the Corps of Engineers programs. There are a lot of hoops to be jumped through to become a valid levee district and participate in the corps programs, and we are trying to make it easier for those districts to do that.

Many individuals lived in the floodplain and didn't realize it. So, through our lending institutions, we are going to make sure that everyone who lives in a floodplain is aware of it and encourage them to buy the flood insurance. Only ten percent were participating in the flood insurance program, which is not good. A lot of businesses that were in the floodplain didn't realize it; they had insurance, but not flood insurance. We have to work out a better system.

**DANIEL HRYHORCZUK:** Now I would like to introduce Dr. Stephen Reynolds, assistant professor at the Department of Preventive Medicine and Environmental Health, the Institute for Agricultural Medicine and Occupational Health at the University of Iowa. He is the director of the industrial hygiene corps of that center. Dr. Reynolds has over ten years of experience in industrial hygiene and environmental health. His current research efforts include exposure assessment methods, bioaerosols and respiratory disease, childhood and occupational lead poisoning, and agricultural safety and health, as well as numerous projects in Eastern Europe, especially Russia and the newly independent states.

**STEPHEN REYNOLDS:** The immediate impacts of the flood of 1993 were readily apparent. As the waters continued to rise throughout the summer, the dramatic images in the media brought the scale of the disaster to the attention of not only our nation but also the rest of the world. Numerous resources were brought to bear in response to this crisis. Federal, state, and local emergency response systems were activated. The Red Cross, the Salvation Army, churches, and other organizations were very active in providing food, clean water, shelter, and clothing. Neighbors, most importantly, helped with their hands and with their hearts.

When the waters finally began to recede and emergency responders brought their initial task to an end, it became clear that the public health impact of the flood of '93 was only beginning. In particular, many of us in this region were concerned that the health and safety needs of the agricultural population were not being addressed.

In response to this concern, CADIREP, or the Center for Agricultural Disease and Injury Research, Education, and Prevention, with support from NIOSH, the National Institute for Occupational Safety and Health, sponsored a workshop at the University of Iowa in November 1993.

The Farm Flood Response Workshop brought together representatives from government agencies, agricultural businesses, relief agencies, farming associations, and academia. The goals of this workshop were, number one, to establish communication and coordination between the numerous organizations involved in responding to this disaster. Number two was to identify existing resources, to look at what was working, then to go beyond that and look at where the gaps were. In particular we wanted to look at the agricultural communities and what resources were lacking for them. The intent was also to develop strategies to fill these gaps, to provide education and enlist the support of all the players that were involved, and encourage consistency of the information being provided as a result of the response.

Work groups at this conference focused on three primary areas: environmental health, stress and mental health, and safety. These groups delineated the specific issues of concern in each area and provided recommendations, which are being disseminated as part of this workshop and in proceedings.

Let me summarize the recommendations. The major points consist of establishing a system to improve the reliability and consistency of health and safety information and to improve access to it. Also recommended were to develop a communications network to link the diverse organizations involved in this disaster response and to initiate surveillance and research programs so as to quickly identify emerging environmental health problems, to assess the effectiveness of response activities, and to provide a quantitative basis for making preventive decisions.

Another recommendation was to provide specific guidance for planning and preparation for the continuing health effects of this flood of 1993 and to provide planning for future disasters.

While we recognize that the scope of the project was limited, being focused on one incident and one social group, the agricultural community, we hope that the results are applicable to all sectors of society and to other kinds of natural disasters.

We have made some of the first steps toward implementing the recommendations of this workshop. In particular, the electronic network was very useful in terms of trying to plan this conference and coordinate our activities.

It is our task in the next few days to respond to a call to action and continue to build alliances and devise strategies to ensure that we meet the public health challenge of this current and future disasters.

**DANIEL HRYHORCZUK:** I would now like to introduce Commander Kevin Tonat, who is the assistant to the director of the Office of Emergency Preparedness/National Medical System. Over the past sixteen years he has been involved in both the public and

private sectors in environmental health and public health, both in field and policy efforts. He is special assistant to Rear Admiral Frank Young and has been assistant to the director of the National Institute of Environmental Health Sciences. Commander Tonat has had international experience in Africa and the Far East and has been involved in response to major disasters, including Hurricane Hugo in St. Croix, Hurricane Andrew in Florida and Louisiana, the flood of 1993, and the California earthquake.

**KEVIN TONAT:** Thank you. On behalf of Admiral Young, who could not make it today, I send greetings. The folks in our office all care very much. Secretary Donna Shalala and Assistant Secretary Phil Lee have not lost sight of the long-term nature of this flood.

What I will talk about is the perspective from the Department of Health and Human Services [DHHS]. Even though I am going to eventually start talking about committees and coordination, response and recovery, and lessons learned, please remember that we all feel very much the individual human tragedy, having been out there and seen it. And although I am going to talk about bureaucratic things, we don't lose sight of this. We are committed for the long term.

Within the Department of Health and Human Services, and the Emergency Preparedness Activities under the federal response plan, the responsible official is the Secretary for the Department of Health and Human Services. The executive agent is the Assistant Secretary for Health, who is the head of the Public Health Service.

The action agency is my boss, Dr. Young. We work through the regional health administrators—this is a rare disaster in that it involved at least three federal regions—and we try to coordinate the health and medical sides with the human services side. We found that during Hurricane Andrew we were able to get Social Security, Medicare, Medicaid, the Administration on Aging, and the Agency for Children and Families hooked up with the Public Health Service. This was a very important thing in the Midwest because we had actually gone through those trials and tribulations, just as I am sure all of you had in your own organizations, on how to coordinate diverse groups. We found during disasters that in many states have mimicked the funding streams. We've got to find ways to try to mix that, to manifold it at the top so we are not always dealing with grants going down certain stovepipes. That is what Admiral Young's office is attempting to do.

Within ESF-8, Emergency Support Function 8 in the larger Federal Response Plan, these are our responsibilities: assessment of health and medical needs; health surveillance; medical care; health medical equipment; supplies (including tetanus vaccine, which we flooded the area with); in-hospital care; food, drug, and medical advice and safety; worker health safety; radiological hazards; mental health and substance abuse; public health information; wastewater and solid waste disposal and how they relate to EPA [Environmental Protection Agency] and the Corps of Engineers responsibilities; vector control, which is an issue that is very important; and victim identification.

You've seen the flood. As you fly over it you can obviously see where the former banks were. The isolation that was involved was very important to us. As we got the declarations, June 11 in Minnesota, July 2 in Wisconsin, July 9 in Iowa, Illinois, and Missouri, we started calling out. One of the first things we were asking in terms of clinics was, What was going on? It was very difficult because some of those areas had been evacuated. That's why I think some of the information transfer issues that you are talking about here are going to be very important. It was very difficult to get information on how people were doing when a clinic had been evacuated. Or perhaps the clinic was evacuated in a very localized place, but the populace was still in the area. Information is very difficult to get in such situations.

Let me quickly outline the anatomy of a disaster. A cataclysmic event results in the overwhelming of local and state resources. Under the Federal Response Plan and a variety of other issues, we can't just step in. We need to be invited in by the states and locals. That is the process with declaration. Now we can speak to state and public health officers, we can be invited in, but that is a very difficult and delicate set of conversations. That's something that we have to work with a little bit better, to get planning on when we can be called and how we can fund support.

A false assumption is that disasters are infrequent and totally unmanageable and that preparedness is expensive. Yes, it is difficult, as you probably all know, to sell preparedness. It's difficult to sell prevention, but recent years have demonstrated its importance. In the last ten years, I believe it is, the United States has experienced eight out of its last ten greatest disasters, not only in terms of cost but also human suffering. Random events, but nonetheless they have really taxed our resources. FEMA has eighty different disasters that they are still staffing offices and keeping an eye on.

The far-ranging effects over time continue to demand resources of society. Jerry Uhlmann referred to that, which is what this conference is about. It is not over. In December I went back to Andrew, in Miami.

They still are recovering. There is still economic hardship. That was a very localized, tight area. This is a very widespread area. It is going to be very difficult to assess, and we are going to have to try to come up with parameters for when recovery is reached. That is something we are also looking into.

The historical aspect has been brought up before. You have 500-year floods, 100-year floods, and many of the people who remember the 1973 flood or the floods in the 1950s try to give you an update. I don't think that, from what we've heard, there was anything ever like this. Each flood, or each disaster, has a different geographic component, which sometimes creates artificial, bureaucratic barriers such as states, across states, and across districts within states. There is a big environmental impact and a large human impact, and we haven't forgotten that.

What were the contributing factors? If you look at the components of this particular disaster, levees were a large component. Building on the floodplain was a large component. Those are things that are very difficult to work back out in the middle of a disaster, but it is very critical for future planning.

In the flood we were fairly fortunate in that the population is fairly homogenous, compared to Los Angeles or Miami. But there are still differences, and you can't make generalizations about communities or states. You have to take a look at what is actually going on and how people are going to react to different situations.

This flood provided unique disaster aspects. It wasn't quick and hard—it was a slow, dirty, lingering disaster. It involved multiple states, and it is clearly a multiple-year disaster. Environmental health aspects are going to be of particular concern, especially as people go back into their homes. Our disaster medical assistance teams, of which many are distributed around the country, that are supposed to respond in these situations really weren't needed in terms of shock and trauma. What were and are needed more are prevention, public health advisors, technical assistance teams consisting of sanitarians and engineers, mental health folks.

In terms of the factors in response and recovery, for acute problems, we are always concerned with, if we respond in a particular way, how that is going to impact the long term. These are sustained development issues. Following Hurricane Andrew, we blanketed the area with Department of Defense personnel, Health and Human Services personnel, PVOs, everyone. You didn't have to wait more than five minutes to receive medical care for several weeks. People become very dependent on that. If you go in and respond in a particular way, are you prepared to recover and live with those expectations that have been created?

Obviously we are concerned with the secondary exposures and effects for the longer term, especially as people move back into their homes, turn their wells back on. How much hepatitis do you have in your county? How much enteric disease? We need that infrastructure information to answer some of these questions. We are mostly concerned for the next year or two about vector-borne diseases, particularly in St. Louis, about encephalitis and western equine encephalitis. How are we going to distinguish those encephalitises as flood-related versus the normal background and then toxic environmental hazards?

Surveillance requires infrastructure—immediately getting out, getting the information during response, getting information back. How well is the state or the local area prepared to give information back so that they can say, These are our needs. What is the status of primary health care and the emergency rooms? What are the concerns with regard to water and sewer treatment systems? The Centers for Disease Control have a list of seventeen questions that they go out and try to get information on. In this case, they were able to establish, with FEMA's support, the health information system and ongoing public health surveillance. FEMA's support in getting 100 computers—one each for the ninety-nine counties and one for the central area—and getting telephone linkups was critical.

As you develop your communication strategies, think about redundant systems, think about how information is going to be transferred. In some disasters you will lose your communications capacity. How are you set up to move that information? What redundant setup systems do you have? If power goes down, you better have backup power. If you are looking at mitigation and planning and health care clinics, look at backup computers, pocket radios, all these things that emergency management folks are pretty well geared up on. Be sure to consult them on what communication systems they are going to be using so that you are compatible.

Regarding environmental health activities, calls went out in terms of public water systems that had been interrupted. Of course the one that was interrupted was a huge one. How many public water systems are threatened? Sewage treatment is interrupted, sewage treatment is threatened. The Environmental Protection Agency, through our continued meetings, is going through every week and updating those that are still under repair. Questions in recovery really come to, What are you going to repair it to? If it was an older plant do you bring it up to the current

code? Is there money to do that? These are important policy issues that are important in any disaster, because it creates opportunities to rebuild and you have to be able to distinguish between the agendas of rebuilding.

Finally, we tried to put things in public health activity terms; Women, Infants and Children (WIC) programs, prenatal, well-child, immunization and communicable disease surveillance. How do you distinguish what level of activity these are going to be at? Are you going to let public health nurses or the Red Cross immunize? Where are the records going to be kept? These are all bigger issues as you are moving through the disaster.

What were the key issues that emerged? We really need good information to support response actions. We need to be able to gear the response, whether it is at the state, local, or federal level, with information. How do you set up studies, how do you try with limited funds to make the choice between funding a larger study for future preparedness planning and recovery versus direct aid to the folks who need it right now?

What lessons did we learn? Multistate events pose unique problems. Immediate health and medical assessments are difficult. Predeveloped public information modules are required—boiled water rules, immunization, access to mental health services, how to take care of elders, aid to children and families. All of these need to be coordinated. We know that airwaves, especially in the radio, travel across state boundaries. The folks in Iowa, Illinois, Missouri, in those tristate areas were hearing different pieces of information. Later in August, and then again in October, we tried to set up standard messages across public health agencies. But that is very difficult to do across nine states. I would urge you within your state to try to develop these in coordinated fashion, and in sister states to try to come up with some reasonable coordination.

We found that the states were unable to access the federal system adequately. I don't think that is a big surprise. You hadn't had very many disasters before. This was a new one. The federal response plan was printed a couple of days before Hurricane Andrew hit. There is a big education process, and multistate reporting is poorly conducted. We have regional health administrators—how are they going to get the information, especially in the face of a disaster?

We tried the best we could to get information and go out to the states—to be invited in and have leadership meetings, which means that we brought the Health and Human Services people from Aging, Social Security Administration, Agency for Children and Families, Health Resources Services Administration, Mental Health, Substance Abuse, Indian Health Service, Centers for Disease Control, Agency for Toxic Substances and Disease Registry. We invited the state analogs to talk about what we could do. Four states took us up on this; the rest didn't. We sent in technical assistance teams through FEMA mission task teams. And, again, to juxtapose the issue with recovery, $3 million were spent on Health and Human Service mission assignments in the nine states through FEMA. The department has spent well over $75 million in recovery, just up to this point, as obligated.

We need to make sure that there is financial assistance in the interim, between when the problem really hits and the longer term. How are we going to develop real budgets? People are coming back and asking questions now. How was the money spent? How well was it spent? How do you make those types of assessments? And that is something that we are really looking at—qualitative and quantitative measures. We sought large coordination with the public health community, through both state and territorial health officials groups, conference calls with each of the health officers in our regional health administration.

Sometimes it would take forty minutes just to get all the people on to the conference call. After a while information transfer becomes extremely burdensome, as I am sure you all have experienced, like listening to teleconference calls as you are trying to get out to the field.

Readiness, response, recovery is what this is really about: planning, getting there and then cleaning up, and taking care in the long run. We found that the response requires multidisciplinary requirements—trauma support, primary care, mental health, substance abuse, communications—both technically, in terms of what type of communication and what kind of gear you are going to order and use, as well as how you are going to transfer information and when. Who's going to be involved in that communication? And the logistics—how do you move materials out?

These were the primary groups that we used—environmental health, epidemiology, some medical specialties, social services, and particularly finance folks, because that is the hardest thing. How do you access money, how do you write mission assignments, how do you manage this amount of money?

In terms of specialties, we had the opportunity to test our disaster mortality teams in response to the flooded cemetery in Ray County. This was a very unfortunate situation; the cemetery literally became a lake, and all of the caskets and people's loved ones were dispensed over hundreds and thousands of acres. We had to send in forensic specialists, medical anthropologists. This is not only a large collection but was a

very difficult thing to try to move through, find these people, identify them, and put them back where they should be. Recently they had a ceremony to rededicate the cemetery. These things have to be done in a very sensitive way.

Recovery begins during the emergency response. You've got to start making long-term recovery decisions at that time and modify them to state and local needs. The federal government will not, in many cases, and certainly not in the case of the Department of Health and Human Services, dictate what state and local groups should do. We need to ask and listen and try to help. It is multiagency, but we cannot have ten streams of money going down separate stovepipes to solve the same problem. We are working on that coordination, and we need to work on it with the states.

Financial planning is an important issue. If you are looking at fiscal year '94, '95, '96 budgets, how are you going to implement that money? How are you going to assess your milestones? After the Northridge earthquake, the budget folks were already asking three days later what our three-, six-, nine-, and twelve-month goals were. We are being asked that now for the flood for several years. Obviously you have to keep sending people out to get that information, and that is difficult to fund.

When after being in three or four states we started seeing the same problems, we decided to get all nine states together. On August 3 and 4 in St. Louis we pulled together seven committees composed of all of the Public Health and Health and Human Services folks that were analogous to our operating divisions. Again, Aging, Children and Families, CDC [Centers for Disease Control], all of those folks, we broke them up into seven committees with a co-chair that had both a state person who was selected and a federal person. These folks stayed together in these committees for four months. The subjects included mental health and substance abuse; environmental health, which had subcommittees in food, because people were concerned about grain spoilage, aflatoxins, and a variety of other things; solid waste; water—private wells and public water systems; and habitability of structures—who's going to make the call on what a habitable structure is, especially when you have insurance companies and a variety of other aid agencies that are going to be making that call as well.

Another committee was vector control. Planning for the next two years has been done. Washington has had several meetings with the state in terms of their laboratory people, and in May they will have another meeting to go over how the overall nine-state surveillance system is going to be conducted. We know that in the 1973 flood, two years later the number of encephalitis cases increased over 400%; this time we want to keep an eye out and be able to prevent something similar.

There was also a primary care committee and elders committee for the aging population, children and families, and a communications subcommittee, because we recognized that all these states needed to be able to cross-communicate.

Hazardous materials we were obviously concerned about. We coordinated very closely with EPA and ATSDR [Agency for Toxic Substance Disease Registry] on these issues. Grain, feed, habitability, food, and sending sanitarians out to the various aid organizations that are trying to get food to folks, but what's the quality of that food? Who's going to say? All of a sudden you have thousands of gallons of water or tons of food to distribute. Somebody needs to look at the quality of that. And it is very difficult when people have brought forth resources to say, I'm sorry, you can't distribute this. And solid waste will be a continuing concern in the spring, along with sewage.

In our role we had to go through FEMA funding. Then when we developed an issue that we thought the department needed to address, we had to go through the FEMA turndown procedure before we could even have the Office of Management and Budget consider it. This sometimes led to delays.

Then we went through our own supplemental budget process, bringing all the agencies and all the departmental people together, pulling in the work group information. The state and federal combined work groups submitted budgets. This was an incredible effort, and it is one of the first times I can remember having states and feds working together on budget inputs. Of course then there is a distribution to states, and some of those numbers also took cuts, but it is really good to have the states' input, saying, This is what our needs are. This is what we think we need to spend. It's amazing, once you get people into a room, they start negotiating: Do you really need this? Do you think you really need that? And we come up with credible estimates.

Admiral Young co-chairs Environmental Health and Safety, which reports to the Domestic Policy Council in the White House, with Sylvia Lawrence, the deputy associate administrator of EPA. Very early on, in July, we recognized that we had a lot of overlap with the Corps of Engineers and with EPA on these water issues and contamination. So we pulled together a meeting of Regions III, VIII, and X to identify both immediate response concerns and long-term sampling concerns.

One concern is for things down in the Gulf with the movement of all of this material, chemical and biological. What's going to be the impact on the shellfish?

An interagency plan has just been funded for a nine-state snapshot, for point of reference, on potential private well contamination. All nine states have agreed to look at E. coli, nitrates, and atrazine, because we were always confronted with, Well, how did you know the well was contaminated because of the flood? How do you know what the background was? FEMA and other folks need to know that, and state information is anecdotal at best, with the exception of one or two states, because most people only test their wells when they sell a house or when the water tastes funny or looks funny.

This is going to be a landmark study. We'll be using a ten-mile grid across all nine states with random selection. There will be eight samples within each county, plus duplicates for quality assurance. We won't be able to give you information to compare county to county, but within a state you should have a very good feeling, and across the entire region we should have a pretty good estimate for well water contamination. We'll be using geographic information systems, and everything will be available on electronic bulletin boards where anybody can get the information.

I have discussed leadership meetings. We have continued the state and region telephone conferences, and we have been very active with the national governors association every time that the governors' offices have a question. This includes USDA [U.S. Department of Agriculture], the Corps of Engineers, the update on levees; there's an update by HUD [Housing and Urban Development] on buyouts and community relocation, and then we update with EPA on environmental health issues. The governors' offices ask us a lot of questions, and they are supposed to be linking up with you all from the state to pass on that information. I would encourage you to talk to them.

Coming up in the spring you will want to think about how all the debris is going to be open-burned. This is not usually a problem in the farm communities, but one of the concerns we have is cross-border issues, such as prevailing winds.

What are the continued concerns? We are still concerned about how vulnerable populations, including children and the aged, are accessing services. We are concerned about the future of St. Louis encephalitis and western equine encephalitis. We have formed committees just to look at this. And we are concerned about injury prevention and control as a result of structural damages that may not be apparent until after the waters have receded or freeze-thaw has ended. We also have formed committees just to deal with domestic violence: spousal abuse, child abuse. And of course we are starting to conduct this nine-state water sampling program.

The bottom line is, we need information. The people with the information, coordination, and control are at the community level. This is where the action is. We all have to work on information flow for decision making. I think we are getting better at it.

What about preparedness for the spring? The Corps of Engineers have put away an awful lot of sandbags. I know Alton in Illinois has already tested or drilled several times, and they have enough sandbags to protect that water treatment plant.

The lessons that you have learned from the flood are transferable to other situations. The middle of a disaster is a bad time to get to know everybody in your state. Set up the networks now. Keep the networks and friendships that you have developed during the flood going. We intend to, and I think it is critical that everybody do it.

This was a very large flood. It is not over yet. And we are here to help. We've got technical assistance money good for the next eight or nine months that we are going to be using in the states. If you have needs, you need to report them up through your state.

**DANIEL HRYHORCZUK:** At this point I would like to invite questions for Commander Tonat or any of our other speakers this morning. Please identify yourself and use the microphone so that we can record your question.

**ART MACHADO:** This is for Commander Tonat. I am Art Machado with the Mental Health Agency in Nebraska. Commander, you mentioned that you would not address the relationship between economic loss and mental health/substance abuse needs. Is there some organizational or policy reason?

**KEVIN TONAT:** No, that's certainly a departmental responsibility. The department is absolutely concerned about the impact of the flood on mental health and substance abuse. In fact, because of delays in Nebraska with the FEMA funding process and a variety of other reasons, we are sending an assessment team to relook at what is going on in Nebraska. The reason I didn't address the issue is that we don't have economic analysts who are necessarily going to make the connection between socioeconomic demographic changes and mental health. What we are concerned

about is the relationship of mental health and substance abuse to the flood.

**ART MACHADO:** Of course there is a relationship between the flood and economic stress.

**KEVIN TONAT:** Absolutely, but we need to focus on what the health issues are and if those are all attendant; and certainly it is difficult to separate out. We need to help people, and get them to treatment and counseling.

**ART MACHADO:** The reason I am asking the question—and you are probably familiar with the situation—is that in Nebraska we didn't have a lot of displacement. We did have some water problems, but not a lot. What we had were crop losses, major crop losses. Those are economic impacts that don't really come to attention until later, until the planting season when people are trying to refinance.

**KEVIN TONAT:** That's right, and we have tried to identify that, and particularly in Nebraska, as a need. Nebraska was the only state that did not get crisis counseling funds at the very earliest time through FEMA. Each of the states has subsequently gotten supplemental funds from the Department of Health and Human Services.

**DANIEL HRYHORCZUK:** Any other questions? Okay. I'd like to thank the speakers of this morning's session.

**COLLEEN HENNESSY:** My name is Colleen Hennessy. I am from the federal Office of Rural Health Policy, located within the Human Resources and Services Administration (HRSA) within Public Health Services, within DHHS.

I would like to start by introducing an international guest that we have here today, Dr. Koscheyev. Currently a visiting professor at the University of Minnesota, Dr. Koscheyev created the Specialized Center for Disaster Medicine Protection in Moscow after the Chernoble disaster. He was there, on the scene, to deal with the Chernoble experience. We hope that you have a chance to talk with him about how disaster responses differ from and are similar to the one we are talking about here.

This first person who is going to speak to us is Dr. Rick Niemeier of NIOSH.

**RICK NIEMEIER:** Thank you, Colleen. I am currently the director of the Division of Standards Development Technology Transfer, and within the last year I have been appointed acting director of training and manpower development.

NIOSH responded to one of the worst floods in history by initiating a communication effort to warn clean-up workers of the numerous hazards they would face, including electrical hazards, carbon monoxide poisoning, musculoskeletal hazards, temperature stresses, heavy equipment, structural instability, hazardous materials, fires, drownings, confined space hazards, stress, fatigue, and agricultural hazards. This supplemented previous efforts in response to related occupational safety and health issues, including the NIOSH efforts to respond after the hurricanes in Puerto Rico, Hawaii, Florida, and Louisiana. NIOSH distributed prevention information to local media, Extension agents, emergency response teams, state directors of emergency medical services, volunteer organizations, and community action associations. NIOSH also provided industrial hygiene support to the Missouri state health department to assist with indoor air environmental quality resulting from the 1993 flood.

NIOSH has learned of additional needs from the Farm Flood Response Workshop that it cosponsored with the University of Iowa Center for Agricultural Disease and Injury Research, Prevention, and Education, in November of '93. As you have heard from Steve Reynolds, these needs included improved communication between service providers, identifying the gaps in information, establishing an information clearinghouse and resource center to provide consistent coordinated information and resources, and developing an electronic information system to share information and expertise.

Since the reinventing NIOSH effort began approximately eighteen months ago, its leadership team has engaged in two major partner meetings to determine how we can better serve our partners by improving our target of research and our outreach efforts, training efforts, and communication efforts. We hope that this conference will help us prepare for future disasters by better understanding the needs and the barriers to quality performance.

The new NIOSH vision appropriately fits here—delivering on the nation's promise, safety and health at work for all people through prevention. To carry out this vision, NIOSH will strive for excellence in science, excellence in service, excellence in efficacy, and excellence in partnership. The NIOSH leadership has compiled a list of values that are essential in establishing and fostering relationships within the NIOSH family and with other federal agencies with worker organizations and industry: honest communication, trust, mutual respect, humility, personal re-

sponsibility, caring, meaningful work, integrity, commitment, and fairness.

The leadership also drafted some strategic goals that are being finalized through the quality process at NIOSH: to empower and enable the practice of prevention through scientific information, to create a quality environment to enable people of NIOSH to excel, to be universally recognized as the leading source of help for a safe and healthy workplace, to engage all potential partners and activate partnerships to delivery of the vision, and to sustain scientific and technological leadership.

The business of NIOSH is to provide national and world leadership in optimizing the system that enables and facilitates the prevention of work-related illness, injury, and death. We accomplish this by a scientific approach to gathering information, assembling and creating knowledge, translating it into products and services, and delivering to all those who can affect prevention.

**COLLEEN HENNESSY:** This is your opportunity to see how well we are doing our job up here as federal players, how well we are getting to you and responding to your needs.

Our second speaker is Brad Rein. Brad is a national program leader for the agriculture industry systems in the USDA Extension service; his primary area of responsibility is administering targeted Extension programs for farm safety and health and "Agribility," which you may have heard of. Agribility is an Extension program and a partnership with private nonprofit disability organizations to provide education and assistance to farmers with disabilities. Brad is also an Extension liaison for the Cooperative Extension system programs and agricultural engineering. Brad is the president-elect for the National Institute for Farm Safety and serves on various committees for this division in the National Safety Council. Brad, a native Nebraskan, received his B.S. and M.S. degrees in agricultural engineering from the University of Nebraska.

**BRADLEY REIN:** Thank you, Colleen. I'm not sure how many of you are real familiar with the Cooperative Extension Service structure. I represent the federal partner, the Cooperative Extension system, which is comprised of both the approximately seventy-four state land grant universities and the county Extension offices, of which we have a little more than 3,000.

The strength of our system really relies upon the expertise and the dedication of those state and county staff in terms of responding to the various issues and needs of the local and state communities. Obviously the great flood has been a very important factor in determining how the state and the county Extension systems respond to those needs.

The federal staff of Extension is quite small. In terms of our human resources the federal staff is roughly one to two percent of the total Extension system. Our greatest contribution comes in terms of the coordination between various federal agencies and providing feedback to the system and to our other federal partners on how the Extension system is responding and what it can do. We provide leadership to that endeavor.

That creates a situation of a lot of missed opportunities in responding to needs. But, at the same time, because there are so few of us, we cover a lot of territory and work with a lot of different groups, so we are aware of the agencies and organizations that can contribute to addressing people's needs. Most of us here represent public service agencies, and it is in those agencies' best interests that we all work together cooperatively in addressing those needs.

I would like to report how the Cooperative Extension system has responded to the great flood of '93. We provided, through the federal office, some supplemental funding to nine Midwestern states, approximately $2.9 million for education programs that assisted in identifying sources and applying for emergency assistance. We utilized an electronic communication network, Internet, which has been a strong benefit in communicating within the system and between other federal agencies. I received probably twenty-five to thirty messages a day. The load has increased a lot in terms of responding to different types of issues and situations. But my phone tag has dropped down a great deal, as well as my direct personal correspondence. And overall I think it has improved our efficiency at the federal level in trying to coordinate activities and get the information out quickly in a manner that is useful to varying organizations.

We have used the electronic system to coordinate activities and to share disaster-related information. For example, a great deal of the transferable information that was developed in responding to the hurricanes in South Carolina and Florida was put up online and was available to Extension systems of the other states.

Reports from two-thirds of the affected states indicated that more than 49,000 households were assisted in some of the following areas during the last few months: thirty-four percent of the assistance related to food, water, feed contamination, and testing; thirty-three percent related to farm business, financial assessment, and planning; twenty-seven percent of our

responses were in the area of personal family management and counseling; six percent were in the area of structural damage assessment and planning.

I'm not sure all of you are aware of how extensive the Cooperative Extension system is. It is not just an agricultural agency. We have expertise that ties in to all the resources within the land grant university—farm financial management, family counseling, family management, youth programs. Over ten percent of the funding was allocated to youth projects. Specific activities involved more than 2,800 youth providing care for children and the elderly, working on restoration of community facilities, and participating in related activities. More than 1,250 communities were assisted with damage assessment and planning for replacement of community facilities and structures.

I could go on and on, but I guess I would have to say that I really admire the cooperation by the Extension service at the county and state level in addressing these issues.

No one agency, no one organization has all the resources and all the expertise to respond to a disaster of this magnitude. But as federal staff we can help provide those windows of opportunity to make that coordination happen.

**COLLEEN HENNESSY:** Thank you, Brad. Our next speaker is Jerry Newcomb, the director of Emergency Operations—Livestock Program Division of the Agriculture Stabilization and Conservation Service (ASCS) for the USDA.

Jerry served in a county ASCS office in Kansas for seven years in addition to his current assignment. He served for six years as the U.S. Representative for the Food and Agriculture Planning Committee of NATO [the North Atlantic Treaty Organization]. This committee, he says, is responsible for assuring food supplies for the members of the NATO alliance in times of conflict. So that is an interesting dimension to understanding disaster planning and services that Jerry can enhance for us.

**JERRY NEWCOMB:** Thank you, Colleen. The reason I mentioned my prior association with the Food and Agriculture Planning Committee of NATO is its communications responsibilities and difficulties. You know all the problems you have had during the flood—nine states, multiple agencies. Try getting coordination between sixteen different nations. And try to get coordinated information, during a conflict, while you are still in a classified mode. It is virtually impossible.

As Colleen said, I am the director of Emergency Operations—Livestock Program Division with the Agricultural Stabilization and Conservation Service. ASCS administers a wide variety of programs, which basically fall into three categories: commodity price support and production adjustment programs, conservation and environmental protection programs, and emergency crop disaster and livestock feed programs.

I would like to dwell just on the emergency programs, probably the most significant during the flooding. Through that program we have the crop program disaster payments, which are authorized by Congress. Secretary [of Agriculture Mike] Espy made eight or nine trips out here to the flood area, and he dictated that we get payments out as soon as possible. In fact, after his first visit he said we would have the first checks issued within two weeks. It was a major, major effort on the part of our computer programming people in Kansas City to get the programs set up and dispersed to all of our counties so they could start cutting checks, as well as getting the necessary information from the producers.

We also have the livestock feed programs, which provide emergency feed for livestock producers. We have basically three different programs that would impact in a flood like this. In one we work with producers to purchase livestock feed. In the second program we sell Commodity Credit Corporation–owned grain at reduced prices. And if the producer cannot afford to participate in either of those programs, we can just flat donate the grain to the producer.

The Commodity Credit Corporation, which most of our programs are administered under, is a federally owned corporation, with borrowing authority from the Treasury of $30 billion. In the last report I saw for the nine flood states, the USDA had put out approximately $2 billion worth of assistance in livestock feed, crop disaster payments, and so forth.

We are currently taking a look at our programs and what we need to do to help in this area during the upcoming crop program. We are making adjustments to our programs without authorized legislation. This can be anything from early release of the ACRCU payment acres, a reduced acreage under our normal crop programs to early release of Conservation Reserve Program money for emergency hay and grazing and other types of adjustments.

We do have an emergency response system within USDA, which begins at the Secretary's level within the Department of Agriculture. We have an emergency coordinator, and each agency has an emergency contact person. I am the emergency contact for our agency. It goes on down to the state level, where we have state emergency boards, comprised of representatives from approximately ten USDA agencies at the

state level, including Extension, Federal Crop Insurance, Statistical Reporting Service, ASCS, Animal Plant and Health, Food Safety Inspection, Food and Nutrition Service—the whole myriad of agencies.

The emergency response system continues on to the county level, where we have approximately 2,800 county offices located in every agricultural community county within the nation. What we call county emergency boards are comprised of four agencies from the Department of Agriculture: ASCS, Soil Conservation, Extension Service, and Farmers Home. In case of a natural disaster that impacts on agriculture, these county emergency boards are to get together, file what we call a flash situation report as sent to the state office or state emergency board, and from there on into my office. What they report is supposed to indicate the amount of damage to cropland, crops, farm facilities, and structures as well as possible programs that may be needed. We require that those reports be filed with our office within twenty-four hours.

Once those reports hit my office we compile them and prepare a report for the Secretary, who disseminates it to all the other impacted agencies within the departments. So we do have a fairly elaborate system. One advantage we have is that each ASCS county office is governed by a local county committee made up of three locally elected farmers. Each county also has community committee members, who are elected by the farmers, approximately ten per county. The Extension service has guidance they receive. Soil Conservation has their boards, Farmers Home has their boards, so we have a wide range from where we can get information.

**COLLEEN HENNESSY:** Our next speaker is Jim MacDonald, on-scene coordinator [OSC] for EPA Region VII's emergency response branch. As OSC at the Disaster Field Office [DFO] in Davenport, Iowa, and St. Louis, Missouri, he was with the DFO during the last year's flood. So he has had a bit of experience in two states. He has also been the OSC at the Times Beach dioxin superfund site in Missouri and now does area constituency and disaster planning for EPA Region VII.

**JIM MACDONALD:** EPA-Region VII covers Missouri, Kansas, Nebraska, and Iowa. During this flood we had Region V, out of Chicago, involved and Region VIII of Denver. In our region the major problems were in Missouri.

I'll go quickly through some of the mission assignments that we received under our ESF-10, Emergency Support Function number 10, and Gary McClure will talk more about the Federal Response Plan. Basically our first call in on this flood was under the Federal Response Plan. Our primary role in EPA is hazardous materials, Emergency Report Function number 10. We also support public health, we support Corps of Engineers. But under this mission assignment for Nebraska, we started off with technical assistance. Then we had to start surveying amounts and types of hazardous wastes around and, in this particular case, prevent the further release of hazardous chemicals. Iowa and Missouri were the heaviest workload for us as far as services, EPA resources, contractor resources. It started in Iowa and just worked its way downstream. In Iowa, as in Missouri, we had to develop an incident command system, because so many people were involved that we had to split things up. We had to figure out who was going to do the operations, the logistics, the administration, and the planning phases.

We had a disaster field office in Davenport, Iowa, and a forward command post in Des Moines. As in all the other states, when we were called out we had to immediately do some reconnaissance and find out where the problem was for hazardous materials. This reconnaissance was done by air, water, and land. We had a lot of facilities to check, and we dealt with spills that were occurring throughout this time period. Most of our work had to do with types of drum recovery—drums, tanks, containers, more than 1,000 propane tanks. Each propane tank has the explosive potential to do a lot of damage, so we had to be very careful with these. When we collected all these materials we had to find temporary storage locations until we could dispose of them. And that wasn't an easy matter—people weren't interested in having a storage area next to their residences or their industries, so we worked with the state on finding temporary storage areas.

We also had a mission on household hazardous waste, those things that you deal with on a normal basis: solvents, cleaning fluids, drainpipe chemicals, lead-based paints. When you get enough of these together, there is a significant quantity to be handled. States did not want these to go into their regular solid waste landfills, so we spent a lot of time collecting, putting the word out, and picking household hazardous waste up.

It is interesting in a disaster like this—everybody in the world wants to know what is going on. Not that they need the information, but they want to know, and as long as your boss or his boss wants to know it, you pass it on. So a lot of time was spent in communication and passing information.

Missouri basically was the same situation, except we had a lot more field command posts, all up and

down the Missouri and Mississippi. The disaster field office is in Earth City, and we had forward command posts in St. Louis, Hannibal, St. Genevieve, Jefferson City, Kansas City, and St. Joseph. And when I say forward command posts, I am talking about another EPA on-scene coordinator, with technical support and contractors able to go by boat to pick materials up, do reconnaissance, pass information, and take care of their areas of responsibility as far as any spills or releases. The same kinds of things happen—spills, drum recovery. We had storage facilities to work with and household hazardous waste to collect.

We experienced differences with the Household Hazardous Waste Program in Iowa versus Missouri. In Iowa we had the right timing—when people are ready to get back into their homes, when they are cleaning them out is when you need to talk to them and have them separate their household hazardous waste. In Missouri our timing was too slow. People had already segregated, and they weren't about to go back and clean things out. So by the time our solid waste folks were picking things up, it was gone. Iowa also has a Household Hazardous Waste Program statewide, whereas in Missouri there are just a few scattered places, like Columbia and Springfield, so public awareness wasn't as great for household hazardous waste in Missouri.

Our primary mission was hazard materials and support of the Federal Response Plan, but as an agency we were involved in sampling, too. There was interest in terms of what this high flood water had in it. Was there anything to be concerned about? So we did some sampling upstream and downstream of the major metropolitan areas: Davenport, Des Moines, St. Louis, and Kansas City. The results were no significant concentrations above the maximum contaminant levels for the states. A couple of months later we did some more sampling in terms of water and sediments. The sediments were compared to some background levels in Missouri, and the water was again compared to the water quality standards. Again, they indicated nothing considered significant.

That's a real quick wrap-up on what we are doing. Basically EPA was involved in hazardous materials as under the Federal Response Plan. We supported Public Health Service. We supported the Corps of Engineers, and we are still doing that. In terms of hazardous materials, we are still doing emergency response work. Several weeks ago the state called in and said, Corps of Engineers wants these 15,000-gallon tanks off the levees before they can start to do some work. We were called in by the state to call up the tanks and we have been doing that for a couple of weeks now.

**COLLEEN HENNESSY:** Thank you, Jim. Our next speaker is Janice Barrier, the assistant regional administrator for the Department of Labor's Occupational Safety and Health Administration. Last summer Janice headed OSHA's flood effort support as a representative to the National Response Team and the Region VII Response Team.

**JANICE BARRIER:** Thank you so much. Last summer was interesting for me. I was doing some temporary duty in the national office in our directorate of technical support, and at the same time we ended up having this flood. My usual role is to assist EPA under our Regional Response Team, so I was involved at both the national level and the regional level, which was very interesting. Most of you know about OSHA in regards to our enforcement and standard-setting activities.

We also, however, get involved in other kinds of activities that we are not as well known for. One of those is our support of consultation services that are administered by various states. We fund states to give consultation, primarily to small businesses. We found with the state of Iowa in particular that consultation services were flooded with requests for help with small businesses who were concerned about the safety and health of their operations during the floods.

Our enforcement activities were not necessarily impacted by the flood. We did not see an increase in complaints by employees against employers for having inadequate facilities. So our efforts were primarily consultative. We have various activities in support of the Regional Response Team, under Emergency Support Function number 10. OSHA has responsibility to EPA—we coordinate with them regularly on hazardous waste activities, we do earthquake preparedness and give them support, and we have a support role with the Corps of Engineers.

One of the things that happened early on during the flood activities was a request from EPA for informational materials. We received a lot of assistance from the Centers for Disease Control and later NIOSH in preparing one-page publications to assist employees and employers during their flood cleanup.

The first publication is very generic, covering aspects of how to protect yourself from safety and health hazards during clean-up operations. An additional one on how to protect yourself when cleaning up after the flood touches on aspects of water quality, which fortunately we didn't have to get into as much as we had feared. How to protect yourself from fungal diseases is an area that OSHA doesn't normally get into, but we had some concern about it because of the rising awareness of fungal problems in the workplace.

EPA was particularly concerned about hazards from asbestos and lead, the subjects of our last two bulletins. If you have any other questions about the Occupational Safety and Health Administration, please feel free to ask me during the conference. Thank you.

**COLLEEN HENNESSY:** The next speaker is Gary McClure, an emergency analyst for FEMA Region VII. During the flood of '93 he was the chief of emergency planning and operations officer. He has 20 years' experience in management with HUD and FEMA.

**GARY MCCLURE:** As you probably know, we at the Federal Emergency Management Agency have been very busy. We seem to be in a growth phase, unfortunately. I like what NIOSH mentioned when they talked about streamlining and becoming more customer-oriented. That's part of Vice-President Gore's national performance review—the federal government has basically been instructed to reinvent government, which I think is a positive measure. I have been in the government 20 years. I have tried to reinvent government, every year, but now we have a lot of support. And FEMA is really working. I think if you notice by the changes in headlines from Hurricane Hugo to Hurricane Andrew to the flood of '93 and the Northridge earthquake, not only have we had a lot of opportunities to get better, but we seem to be getting things right.

I would like to welcome you on behalf of John Miller, our regional director. Frank Bigley, our deputy, is not here; he has yielded his time to me. I'd like to cover three things today: a brief picture of the response recovery actions during the flood of '93, the Federal Response Plan, and health and safety issues.

Everyone wants to talk about disasters now. We are pleased about that because in FEMA we don't just do disasters; we have preparedness functions, we have off-site responsibility for nuclear power plants, we have the National Flood Insurance Program, and we have disaster programs—and, very importantly, we have a whole preparedness side of our agency which focuses on community plan, readiness, alert and notification, storm warning, hazardous materials programs. But disasters seem ~~to~~ overwhelm us~~.~~ In our office in Kansas City we have sixty-five people for ten regions. Only about ten or fifteen people work the disaster side, and we have not seen them since last April.

We are going to be in the recovery process for three or four years. Nine states were affected by this disaster. When the President, at the request of a state, declares an area of emergency, eligible for federal assistance, he does it on a county basis. So when St. Louis County was declared, cities within St. Louis County became eligible. Over 500 counties were declared eligible, including every county in Iowa, for example. In Missouri it was mainly the areas north of the Missouri River.

El Niño created a situation—we had a shift of the jet stream, and then the Bermuda high stalled and moved over a coastal position creating over 4,000 thunderstorms, 177 flash floods with nine to twelve inches of rainfall. While we are seeing rainfall right now, it is nothing like the conditions that existed for two to three months in the Mississippi, which is over a million square miles, a volume of water equal to Lake Erie. We could have had damages a lot worse.

Other speakers have mentioned the Federal Response Plan. This very important document is a change for the federal government. In the past I would work disasters. Say, there was a disaster in St. Louis, or Nebraska—we would come in two or three weeks later, after the states had turned in all the paperwork and documented the losses. After Hurricane Hugo, which was almost like a nuclear attack on Puerto Rico and the Virgin Islands, there were no communications, there were very serious problems—complete breakdown in law and order. People were without water.

The federal government was chastised for not being in the response mode. And so Congress changed the Act that gave us the authority to respond, renamed the Stafford Act, and the Federal Response Plan was added to that. With Hurricane Andrew, we learned that we had to be proactive. We need to pre-position resources. In the flood of '93 we did that. We had enough warning, it was a slow-moving event. But this was the first activation, I think, in every state in the region. We have the same region that EPA does—Iowa, Missouri, Kansas, and Nebraska. We actually activated that plan. I had worked the year before getting it through. We developed the Regional Response Plan. We used to go to meetings in the states, and sometimes they question why we are there. They didn't think there would ever be a disaster that would require "the activation of the Andrew plan." Credibility was hard—we didn't have much. We do now. And those meetings helped the response.

Basically we sent out emergency response teams, which included members of FEMA and other agencies. We had FEMA people in the state, some for over three months. The response phase was that long.

The Regional Operation Center, which is where I was during the flood, was going for thirteen days, and most of us are not used to running an emergency operations phase. We are not generally an emergency

quick-response agency, like some of those with strike forces, because basically we have been geared to preparedness issues. We activated eight emergency support functions under the Federal Response Plan. Mission assignments were issued, authorities for federal agencies to act. So if we issued a mission assignment, for example, at 6:00 in the morning on the 11th of July to the Corps of Engineers to provide water for the city of Des Moines by noon because 250,000 people are going to be out of water, could it be done? Yes, it was done.

The same thing happened later in St. Joseph, Missouri. We now have to be able to respond in two hours. The federal government is supposed to be on scene, to have some semblance of people and resources to support state and local governments. In an earthquake here, we would expect that to happen. And I think you saw that in Northridge. So we are in a very proactive stance.

Most mission assignments were issued in Iowa because of the water, which I think is an important health and safety issue, because if you lose water, you also have the problem of sanitary conditions. We ended up having to provide a lot of porta-potties and things like that.

Our region was heavily impacted. Of the 500 counties declared eligible, 309 were in our region. Under our authorization we provide assistance to individuals and families through the Individual and Family Grant Program. That number is constantly going up. We also provide temporary housing assistance if people lose their houses. And a very important program is the Public Assistance Program, when communities lose public facilities—water treatment plants, sewage treatment plants, schools, libraries. Our hazard mitigation program is, according to our director, James Lee Witt, the cornerstone of FEMA, and it is the future. Because if you can prevent damages from happening, you are going to save a lot of taxpayers' money. You are going to reduce the number of health and safety issues that you have to face, and it will help.

Nationwide, I mentioned, there were over 500 counties declared eligible for assistance. At that time it was $5 billion, but now this has all been eclipsed by what you are seeing in Northridge. Just the number of applications for assistance is over 400,000. And that was small, a 7.1 [earthquake]. I shudder to think what a 7.1 will do on the New Madrid. You notice I said *will* do.

Basically, the Federal Response Plan is our normal way to do business. We serve the state and local governments. There are customers under National Performance Review. And we also assist other federal agencies. So you, too, are our customers. We are very interested in improving our customer service. And actually, ultimately, our customers are the victims of disasters. Formally we go through the state, who goes through local governments, to deliver the assistance.

The Regional Response Plan mirrors the Federal Response Plan but tailors it to a region. The Federal Response Plan provides an overview of how we are supposed to pull twelve federal agencies together, as primary agencies, and twenty-seven other agencies who support those twelve in a cohesive response in a matter of hours. It was done, it can be done. We've done it repeatedly now, and we are getting it down. The Regional Response Plan is more operationally geared, and it, again, is addressed to any emergency.

We responded to a flood this time. It could be an earthquake. Usually it is a catastrophic event. And the flood of '93 was termed catastrophic because of the loss of the Des Moines water treatment plant. We had disasters declared in those states, and then we had to implement the Federal Response Plan after the president had declared disasters, which is not according to script. Normally, we would activate the Federal Response Plan, people like me would be very nervous about preparing mission assignments, because we wonder where the money is coming from, and then a disaster declaration would occur. However, it seems for several administrations that the President has been willing to speed along the process of a declaration in times of emergencies.

The Federal Response Plan is a functional plan. Basically you have transportation, you have mass care, you have food, energy. Then you have twenty-seven agencies. But under each function is one primary agency: USF-10 is hazardous materials, and EPA is the lead agency. Other agencies provide support. That is the way the Federal Response Plan is set up. When it is implemented, we convene regionally at a disaster field office or in a FEMA regional office to begin that instantaneous response. And the health and safety issues are paramount, because we are looking at life-threatening emergencies.

Let's look at what we did in the flood of '93 related to health and safety. We activated ESF-3, which was Public Works and Engineering, the Army Corps of Engineers. I can't be more complimentary of what they did. At 2:00 in the morning, when I got a phone call saying, the Des Moines water works has gone out, I quickly decided to recommend that we activate the Regional Operations Center and bring in certain agencies, including the Corps of Engineers.

By 4:00 in the morning, federal agency personnel began streaming into the office in Kansas City. We had mission assignments prepared for a million dollars to start the flow of water. And actually I don't think

anybody suffered in Des Moines because of the loss of their water treatment plant. That plant went down dirty—not only did it get wet, but water with bacteria and other things got into the stream, and for over ten days we had to provide water to people in Des Moines. I think it was more like twenty days to get it cleaned out. It is the first time an American city of that size had ever lost its critical utility.

As tragic as disasters are, they also present opportunities, and that's important. Probably a cornerstone of the recovery was ESF-8, Health and Medical, whose lead agency is the Department of Health and Human Services. Public Health Service staffed our disaster field offices, and when we issued a mission assignment, a lot of the tasking went to them. A large part of a cemetery in Missouri was washed away, and that qualified for assistance under the Stafford Act. Eventually we had to authorize Public Health Service to bring in demortuary teams, who along with FBI specialists began to identify remains. It became a public health nightmare.

As part of the recovery process we also have a mitigation project by way of buyouts. We may see as many as 7,000 people voluntarily accept relocation out of the floodplain, which will make an important impact on the health and safety in the region and will make our jobs a little easier.

**COLLEEN HENNESSY:** Our last speaker today is Josephine Malilay, an epidemiologist at the Disaster Assessment and Epidemiology section of CDC for the past three years.

**JOSEPHINE MALILAY:** Good morning. The Centers for Disease Control is comprised of some ten organizations, one of which is the National Center for Environmental Health. I represent this morning the Disaster Assessment and Epidemiology section of the Division of Environmental Hazards and Health Effects, in the National Center for Environmental Health.

At the activation of the Federal Response Plan, ESF-8, our group was called to several states in the disaster site to conduct epidemiologic surveillance in relation to the floods. We went to several states—Iowa, Kansas, and Illinois, among others—and several of us were in Missouri. There were two particular projects that we conducted that I would like to share with you all, especially since I think that this will have bearing on flood-related studies in the future.

We work primarily in the epidemiology of natural disasters. Epidemiology is the study or the investigation of the causes and determinants of diseases in populations. We compare victims with survivors to learn how and why they differed. We identify risk groups of person, place, and time with exposures—environmental exposures in this case—with the idea of looking for prevention or reduction strategies.

We conduct three main types of activities. One is response. We investigate health effects. Another is surveillance. This is monitoring health-related conditions in the population, particularly after the disaster. And last is research, where we identify risk factors for mortality and morbidity in relation to the particular disaster. As I said before, we worked with the state of Missouri. There are two people here that I would like to acknowledge: Doug Adams, from the Department of Health, and Dr. Denny Donald, the state epidemiologist. We were able to foster a very good working relationship in the course of our three-week stay.

The first study that we conducted concerned morbidity. First of all, St. Louis, or the state of Missouri, is traversed by two major rivers, the Missouri and the Mississippi. So there was some interesting background information about this state in particular compared to all the others. We look for what was different about each disaster in each site and then attempt to investigate what made the conditions different.

In Missouri two kinds of floods occurred. One was rivering, which is the overflow of areas not normally submerged. The other was flash flooding, due primarily to the local flood of rising water in a short duration with great volume. Missouri had about twenty-five deaths about mid-August, compared with one to eight reported in all the other states. We wondered, as epidemiologists, why the state of Missouri had experienced so much mortality in comparison to others.

We went in and investigated. We determined the circumstances of flood-related deaths, we identified risk factors for those deaths, and we came up with prevention strategies. We defined deaths as those that occurred after June 28th, when the flash floods took place, and when the potential threat of rivering was recognized by the Missouri SEMA and would not have happened had the floods not occurred. We found cases by contacting coroners and medical examiners throughout some seventy-one counties that were declared as disaster zones and from information from SEMA and the DFO. We looked at time, location, and circumstances of death, and we compared them for flood types. We found that over a period from July 1st to August 31st, twenty-seven deaths had actually occurred in this state, verified with the Red Cross, FEMA, and other sources. Twenty-one of these were directly related to drowning, six were indirect. Eleven were related to rivering flooding, sixteen to flash flooding, and of the twenty-seven, twenty-one were connected with drowning.

So why is this important? Well, we came out with advice, guidelines, and prevention strategies, but later on that fall, sixteen additional deaths occurred, primarily attributed to flash flooding. Fourteen were related to motor vehicle incidents and two occurred when the Missouri River flooded homes. The result is that drowning was the leading cause of death, here, like in other hydrological disasters. But in this state, 75% were motor vehicle–related. I commend the state for having put out guidelines, which I have just received today, given the impending threat of floods this spring. They are the most comprehensive health guidelines that we have for flood-related disasters.

Our other study concerned morbidity, meaning illness. What was different about Missouri? What was different about all these states, and this particular disaster? What was the response? We looked at everything—from media reports, from talking with people from SEMA, from the National Guard, from other federal agencies. We noticed that the major prevention activity in this particular flood was sandbagging. Our surveillance data showed that about 16% of all the illnesses were attributed to dermatitis or skin disorders. Musculoskeletal problems you would expect—they ranked about 40%, but that was predictable. It was dermatitis that was very different.

We went back and investigated and found out that midway through the response operations, the Army Corps of Engineers ran out of river sand to fill the thirty- to forty-pound burlap and plastic bags. So instead they filled the bags with agricultural lime, which I understand is very common here. We took a sample from one sandbag in St. Genevieve and found that the contents, indeed, were calcium hydroxide, a dermal irritant that can have potent effects on open skin or with prolonged contact on intact skin. In the eyes it can actually cause blindness. But yet our surveillance system didn't detect that.

So far our data don't show any statistical significance between sandbagging operations and dermal irritations, but most of the visits that we saw to the emergency departments were related to skin conditions and people who were actually out there handling the sandbags, so that is our hypothesis. I share this with you because it is information specific for your area and that perhaps you can follow up on.

In conclusion, what were the strengths and limitations of our response? Well, we were there. We were there in a timely fashion. We worked with the state, and I thought we accomplished quite a bit in terms of recommendations for mortality. Perhaps one limitation is that our recommendations should have come out sooner, and perhaps they could have prevented the sixteen deaths that occurred later on that fall.

In terms of strengths, I think that our presence helped to elucidate new directions for further research, including what to put in sandbags. Thank you very much.

**COLLEEN HENNESSY:** This marks the end of the sitting-and-listening part of the conference. From now on you will be expected to participate, and we would like for you to start now, by sharing the differences between your vantage point and ours. As you know, the way you view a disaster depends on where you are standing, and the very first element in finding a way to coordinate and communicate better is getting a good grasp of others' views.

As you have listened to us you may have been thinking, Well, I didn't see that, or, I did see that but it didn't work because of this, or, How come it appears that they were doing their job but yet these areas were missing. Well, now is the time to bring that up to the microphone and let us begin to see where our work is for the next two days. You may address us generally, or you may address us specifically and we'll take your questions.

**JANET IVORY:** My name is Janet Ivory. I am here from New York. I am with the New York Center for Agricultural Medicine and Health. A question to Bradley Rein: You mentioned that the Internet has facilitated a lot of the communications. Are there any problems with it? How do you go back to your office and handle 150 communications in one evening or day?

**BRADLEY REIN:** There's a lot of prioritization with that. But if you have a good system set up, you can respond to messages quite quickly. It takes me probably about an hour a day, I would say, to respond to most of those, an hour and a half. But it depends on the type of message, whether it is strictly information or a request for a response. It is just like you would handle any other type of communication.

**JANET IVORY:** But a request for a response could entail effort; you might need to support that in a number of ways, more than just an E-mail.

**BRADLEY REIN:** That is true. It can involve forwarding it to someone else for their input, with a copy back to the sender that you are requesting additional information from someone else. We use Pegasus Mail, a software system for managing our mail. A lot of functions can be done with the flick of a keystroke. The

longer you are with an agency, the more experienced you get, the better your connections are, and the better your source of knowledge is for who can answer and respond appropriately.

**JANET IVORY:** Thank you. I have a second question, this one for Gary McClure. You mentioned that the recovery process is three to five years. Does that mean that FEMA is committed to funding efforts for three to five years and beyond?

**GARY MCCLURE:** Yes, if the taxpayer is. In fact, the flood of '93 states actually got money in a Northridge earthquake bill, additional funds for mitigation, for buyouts. I believe the USDA got several hundreds of millions of dollars. But we still have people in mobile homes, unfortunately. We still have people in temporary housing, and people who have lost their homes are still looking, to find homes. The areas that were hit, especially along the Mississippi, are rural areas and they don't have housing stock available. I mean, if you are a business owner you are not going to invest in rental property in a town of, say, ten to fifteen thousand, hoping that there is going to be a need for that. So it's going to be a very long process.

**DAVID HINES:** I am David Hines with the University of Wisconsin Extension Local Government Center. As you are coming out of the response phase and getting into the recovery phase—and I can address this to anyone who cares to respond—what is your experience with working with local governments and local organizations? Are they capable of working with you yet? Are you finding some problems in working with them, or are there cases where you are still unable to work with local governments?

**GARY MCCLURE:** FEMA can go first. We deal with local governments through the state, and we were interfacing in the recovery side with local governments. I have to applaud the response of local government, of state government, and of federal agencies here to the flood of '93. I think that you all did a fantastic job. This thing really taxed our resources, and it continues to. Local governments in a lot of communities, in all four FEMA regions in the nine states, are faced with the issue I mentioned about housing. There's a lot of buyout interest. Twelve years ago I was involved in a buyout of thirty homes in Arnold, Missouri. I had to be here for six months. People wondered what I was doing in St. Louis for six months. It cost us a million dollars to buy out homes. I had a staff of four or five people.

We now have local governments who are tying to buy out, in some cases, their entire community, using funds from HUD, from FEMA, working with the state and the federal agencies. It is taxing. I don't want to say it is insurmountable—the objectives are high and it is going to really benefit all of us. But they need a lot of technical assistance. Economic Development Administration, which is not represented here, has placed people in twenty-nine regional planning commissions to help assist just in the economic side of recovery. They also help on HUD projects and FEMA projects as long as it doesn't interfere with their own missions. So I would say that they are still impacted. And you have to realize that state and local governments are responding right now to the flooding that is going on right now. It doesn't reach our level until it goes beyond the abilities of state and local governments, so they are in this daily.

**JOSEPHINE MALILAY:** From a health studies perspective, we come here and we identify areas for investigation. We identify problem areas. And then we leave, because we are here for only a certain amount of time, two or three weeks, and then we are gone. But then there is a window of opportunity for state and local people for funding that is available only for a certain amount of time. They need to be aware of that time frame and when these grants are available. As a researcher, I don't keep up with that, but I think that you all could interact more with the administrators and find out how to get at these.

**LARRY CHAPMAN:** My name is Larry Chapman. I am a researcher at the University of Wisconsin, and I would like to ask Bradley Rein a question. How did the U.S. Department of Agriculture assist Extension agents in local areas after the flood? And second, are there any plans for building new disaster-specific agent capabilities?

**BRADLEY REIN:** Our primary response was providing supplemental funding to try to respond to the flood. Some of that was used to hire temporary professionals to work with roughly 49,000 households. Farm Financial Planning was part of it. Some of the youth funding programs was another part, in terms of mobilizing a lot of volunteers.

One thing I didn't point out is that about three million volunteers contribute annually to the total effect of the Cooperative Extension system. We serve as a catalyst for mobilizing a lot of volunteer organizations and volunteer resources. So I think that is one of the ways that we respond.

In terms of long-term disaster response, you know the Extension Service is part of the official county and state emergency boards, in terms of the USDA emergency boards, but we also recognize that through some supplemental funding we may need to provide some additional assistance. We are still looking into that.

**HOLLY HUNTS:** My name is Holly Hunts. I am from the University of Illinois Cooperative Extension Service, and I wanted to sort of address the same question with some things that are going on in Illinois that we are really excited about. Illinois Cooperative Extension is organized differently than almost any other state in the United States. We have specialists, which is sort of the Ph.D. level at the university; then educators, who are at a master's level and located in what we call centers throughout the state; and then local leaders, which is our unit, our county contact. Some counties have one local leader; other local leaders serve a group of counties.

In Illinois we have developed a permanent disaster task force within the Cooperative Extension Service, and we are looking to other portions of our university to add to it. We are really excited about that university-wide development. We also have a formal agreement that organizes the University of Illinois as a resource center with FEMA, and we will be one of the first people that FEMA calls to help disseminate information.

**BILL CAMPBELL:** I am Bill Campbell, also with the University of Illinois Cooperative Extension Service. I don't know whether Gary McClure is going to be able to answer this, but you mentioned the three- to four-year recovery phase and that FEMA was going to be here for the long haul. If I can make a couple of suggestions to smooth things out with the public. I was responsible for basically the area of Illinois that received flooding from the Mississippi and the Illinois Rivers. We ran into a couple of problems. Number one, about halfway through the flooding stage, as things were beginning to wrap up and the water was beginning to recede from the Illinois areas, the FEMA people with whom we had worked diligently for about three months to establish contacts all of a sudden disappeared and were shipped off to other places. The new group came in, and they had no idea what was going on. Some of the information you've given us here would have helped to get some word out to the public about why things were taking the amount of time they were taking, and things like that. I also back up what Holly Hunts said, in that if FEMA can make use of other agencies within the government, such as the Extension Service, to help them out with disseminating information, not only will we be able to better serve our public, but I think we will be able to take some heat off FEMA as a result.

My question is this: Why aren't there any rattlings of buyout for the earthquake, like there were for several hundred thousand people who have been displaced and affected by the flooding—if you would care to philosophize for a moment.

**GARY MCCLURE:** I spent five years of my life on the central Missouri earthquake project. And I have also had a lot of geological training and I've got a masters in regional planning from [Southern Illinois University at] Edwardsville, which is in that area you just described. First of all on the staffing. We have a terrific problem with it. I mentioned we are a very small agency. We are only up to about 400 people. Our office in Kansas City has sixty-five, and I think if you look at the Corps of Engineers and EPA they are up to five or six hundred. We don't need to be that large, but what we do is rely on other federal agencies as resources. We have a disaster reservist cadre, which we have basically exhausted. Then we have senior retired executives. We go to all sources. We have worked those for years in the Flood Insurance Program. The Extension centers are an unbelievable resource. Emergency boards that were mentioned, these are great assets. We need to learn, but I can tell you that we still have reservists from other regions in our region. Those other regions need them.

Regarding the buyouts, we refer to "buying people out of harm's way." It's a lot easier to buy people out of harm's way in floodplains. You might ask, Why didn't they have flood insurance until the federal government stepped in. Well if you were an actuary, you know where it is going to flood: basically, 9% of America is floodplains, and 18% of the people live there. That creates sort of a disincentive to provide insurance. It creates an opportunity for us.

There are thirty-nine states that have earthquake risk, and we have great risk here for the New Madrid. Over twenty-one states would be affected, seven perhaps heavily. If we have a recurrence of the 1811, 1812 New Madrid earthquakes, which were around 8.5, we will all be working for probably the rest of our lives in recovery. It is harder to mitigate—coming up with building standards is what we are talking about for earthquakes—because it isn't always right on the fault line that you have the most damage.

If you think of the Mexico City earthquake that destroyed the buildings in the lake district, that epicenter was out in the Pacific Ocean. It passed clear across Mexico into Mexico City and only destroyed

buildings eighteen to twenty or eighteen to thirty-five stories in the lake district. I think an engineer architect could speak to this better, but if you tried to say, You can't build there, or, We need to build better, you might have to kind of quantify that. Perhaps the idea is building better in earthquake buildings, strengthening buildings so that they don't create hazards. But so many states have earthquake risks. I mentioned thirty-nine. You are talking about a lot of real estate. Those kind of mitigation strategies probably don't apply there. The strengthening would. In floodplains it makes a lot of sense. Does that help?

**BILL CAMPBELL:** I just feel that a lot of the mitigation procedures are singling out one sector of society, especially in the floodplain, and while there is a good likelihood of recurrence in the floodplain, there is also a pretty good chance that that land can be productive. Running people out of there for the mere fact that they can't house equipment and house grain down there is a bit drastic, I feel.

**STEVE REYNOLDS:** I am Steve Reynolds with the University of Iowa. One of the continuing concerns, and I have heard it from a number of other people here, is some of the health effects and being able to quantify them and identify the risk factors involved. We have been spending so much time on policy issues at the University of Iowa that we haven't been able to focus much on research activities. For Janice Barrier, from OSHA—I am curious with the interactions that OSHA has had with businesses as to whether you have been able to collect any information, either on surveillance or on case reports involving the problems that these individuals have been experiencing and really how widespread and what risk factors there are for fungal disease, asbestos, lead.

**JANICE BARRIER:** As I said previously, our primary role is enforcement and standard setting. And during the course of our activities in enforcement, I was quite surprised that employees were not calling in complaints about employers who were, for example, not providing adequate sanitary facilities, or were exposing them to various health hazards without the use of personal protective equipment. For some reason they were not calling in. It was probably because of the natural disaster aspect of the situation. We have not had any data at all in our enforcement activities, but our sister agency, NIOSH, has given this more consideration.

**QUESTIONER:** One last question—maybe both NIOSH and a representative from CDC could answer it. In terms of pursing resources to look at research in addition to the work that has been ongoing. Are the CDC monies that you mentioned available primarily working with the state health departments, or are there other routes to pursue that?

**JOSEPHINE MALILAY:** Yes—and Kevin may want to add to this—after a disaster there is usually about a month or so where counties and that state can apply for monies to restore programs to predisaster conditions, among others, new research. The monies are usually good for a year and can be extended to two years. I know we did that with the California earthquake, and that also happened for this particular flood. So, it's a matter of learning how one goes about procuring these monies, when they are available, and how you go about applying for them. Ordinarily the states and the counties apply, but these I know are subcontracted to universities as well. Kevin, do you want to add anything?

**KEVIN TONAT:** A variety of states or universities have pursued research funds, keeping in mind the need for not research for research's sake but research for intervention, applied research. What's the product going to be? How does it relate to the flood? How are we going to benefit the populace with the information? I just got back from a review where some of the University of Iowa and Iowa State folks are working with the state to identify certain areas, for instance, novel on-site alternative sewage plants, looking at pesticides from formerly owned USDA bins. They're examining risk communication strategies for what to do in the event of another flood. Graduate students and others are involved in these. The handle is coming through the state.

**PANELIST:** From the standpoint of the NIOSH perspective, you may or may not be aware that NIOSH has had an agricultural initiative for about the past four years. I can't say with authority if there have been any proposals to study the epidemiology of the '93 flood, but I would imagine some of our surveillance activities which we funded through cooperative agreements and grants may be taking a look at this. We are beginning as a leadership team in NIOSH to reexamine the monies that are distributed through the Agricultural Cooperative Agreements. And this indeed may be one of those topics that we need to take a look at.

**ART MACHADO:** This is for Jerry Newcomb. Do you have any idea as to the adequacy of the livestock feed and crop programs, in terms of keeping farmers afloat? Are you trying to get a handle on that?

**JERRY NEWCOMB:** Regarding the livestock feed program, we had very, very little use of the program in the flood area. The largest area was Wisconsin; I think we paid out about $15 to $19 million. The Emergency Hay and Grazing aspect was used very little on the ACRCU and CRP acreage. On the livestock feed program we do take the producer back up to 100% of the feed loss, but we limit the dollar amount to approximately 40% of what the cost would have been.

On the disaster payment, as you know, we are limited to 65%. I seriously doubt if it covers the cost that they have put into putting the crop into the ground, but it does help them recover some of that money they have lost.

**QUESTIONER:** One question for Gary McClure. We had a real nightmare with the Crisis Counseling Stafford Act, Crisis Counseling Grant, and I will talk to you about the details later, but are you looking at that process, or is our experience singular?

**GARY MCCLURE:** I am not real familiar with that aspect, but if you give me information I can take it back and have people get back to you. I know it's a critical part of emergency management—postdisaster stress syndrome, even later effects. It is something we are interested in.

**NILS OLSEN:** My name is Nils Olsen. I am from the University of Iowa, and I am wondering, in light of recent research linking psychological stress with increased susceptibility to illness such as cancer, to what extent are you including this kind of empirical work in your policy for future disasters? I would just ask that of the entire panel.

**PANELIST:** It would be interesting from the Public Health Service side to evaluate that on the questionnaires that are being distributed. I would imagine if the study were well designed to begin with, if we were looking at cancer studies, or any other epidemiologic studies, hopefully they are taking into account on the surveys, if they are doing gross epidemiology, psychosocial factors. One of the major concerns I could say that we had more from a research end—and again, separating ourselves, because the human tragedy was something we were really focused on—if there were major grants for studying populations in the Midwest, and such an event did occur, how would that bias or confound some of the studies that may be going on all across the board? And we have asked, informally, each of the research institutions within the Public Health Service to evaluate that.

**JULIE SESSIONS:** Hi, I'm Julie Sessions from the University of Iowa. This is for all of you in coordinating positions. I'd like to take this opportunity to thank you for being available to us today, and the rest of the conference. What elements in your experience so far have made a big difference in facilitating the coordination and communication and needs assessment? Could you address those things for us?

**PANELIST:** I think I would like to go into more depth later. But I would like to say right now that I think the most important thing is to show commitment on the part of the department that is involved, and that means bringing its leaders out to the disaster site, its managers and coordinators out to see it. Fundamentally, that all of a sudden brings people a lot more in touch with what's going on, and they start recognizing the need for coordination. It's not an abstract issue; we can go into particulars. But I think getting leadership out and actually examining the product and seeing what people are going through is very, very important.

**JERRY NEWCOMB:** I would simply agree with what was said. As I mentioned earlier, the Secretary [of Agriculture] asked me to make eight or nine trips out here last year. I think he was just out here two or three weeks ago again. We also have the Flood Recovery Task Force that Secretary Espy chairs that is ongoing. I think we have about fifteen people permanently detailed to that assignment. I would like to cover more of it tomorrow.

**ANNA GUINNESS:** My name is Anna Guinness and I am from Southern Illinois University at Carbondale, about two hours southeast of here. I am with the Center for Rural Health there, and we are starting to focus in on environmental health and groundwater issues, and we are trying to do some pesticide and groundwater studies. I was wondering if Josephine Malilay could tell me whether there are any outstanding case histories with this particular flood with pesticides and groundwater, or I imagine most instances of illnesses and sicknesses regarding this flood are probably viral and bacterial with wells and groundwater. Could you give me an overview of what you know to date?

**JOSEPHINE MALILAY:** Our surveillance systems of emergency department records showed no increases in any of these conditions, both from an environmental perspective and from an infectious disease perspective. Certainly monitoring is what you

should be on top of here. That's the only way one can ever detect anything unusual in the conditions here. With pesticide evaluation it seems that monitoring would be something that you would do long-term. There may be health effects later on that may surface. But to date our data has not shown any increases otherwise.

**ANNA GUINNESS:** I think the problem with the pesticide is that in Illinois we had very few sites on the floodplain with background data on pesticides. And they are extremely low level, so we don't really know what to compare to. But I was just curious about other states. Thank you.

# *FLOOD TOUR PREVIEW* Monday, April 11, 1994

**PAUL GUNDERSON:** I am Paul Gunderson, director of the National Farm Medicine Center in Marshfield, Wisconsin. We are going to make a transition as we move into the luncheon presentations. As you recall, the perspective this morning was from the agencies whose mission is defined by congressional statute. We now move to a different sector, one which I can assure you is of intense interest to a good number of us and frankly quite intriguing to those who were monitoring the unfolding events of last summer.

It gives me great pleasure to introduce David Baker from Missouri Agricultural Extension. Dave brings a wealth of insight and experience to the post he currently holds. His role with us today is to summarize the experience of a summer which began for some of us at an annual meeting in Idaho with hardly a glint of this kind of thing in June, and by mid-July, my, how the world had changed.

**DAVID BAKER:** As most of you have noticed, I didn't do a real good job with the weather. It's raining outside, but we are still going to do our tour [of flooded areas in the afternoon]. I hope to give you a better idea of what we've dealt with in Missouri and what we are dealing with in this nine-state region.

For those of you who have not been to the floodplain, part of the reason that we integrated a tour into the conference was so you could see firsthand what was not shown on CNN and other media outlets.

St. Louis is an interesting community. It's a major metropolitan area, with agriculture fairly close by. But it is also the convergence for two major bodies of water. The Mississippi and the Missouri both come together just north of here, and that's where we are going to take you this afternoon. The Missouri is an interesting river, a very fast-moving river that brings all kinds of unique challenges from the standpoint of management, of response, of what we have had to deal with in that area and what we are dealing with today. You look at the Mississippi with one type of response and damage, then you look at the Missouri and you've got a different situation to deal with.

[Slide projected here.] This is just north of St. Louis, where the two rivers come together. It gives you an idea of the size and the amount of water that was coming in those two areas and what we were dealing with, of the miles-wide area where those two rivers came together.

[Slide.] A little interesting challenge here. The university sits about 30 minutes north of Jefferson City. Many of us were responding with the state agencies, when Highways 54 and 63, the main two arteries feeding into Jeff City, were lost. What took me thirty minutes to drive on a typical day was taking almost seventy minutes, and at times we thought we were going to lose I-70. We came extremely close to losing it for a period of time that would have totally shut this state down, north-south, east-west, rather quickly.

[Slide.] This is a typical ag area, although the water level is fairly low there. We've got the Missouri, which comes from the northwest corner across the central part of the state, with major tributaries feeding in. There are three other rivers on here that feed into the Missouri, plus all the small tributaries that feed in.

Columbia, Missouri, is off of the river, but it almost lost its water supply. It was totally surrounded with water, but within about a foot and a half of topping that, and we would have lost all of our water supply for the city of Columbia. That's not something you think about when you're probably fifteen or twenty miles off the river.

Jerry talked this morning about the number of levees that we blew. This is a nongeologist talking, but I always get a kick out of the fact that people kept saying the levees caused the flood. I hate to tell you, but it was what came out of the sky that caused the flood. Now, for the height of the flood we may give some fault to the levees. I still have a little problem with that. We blew most of those levees within the first two weeks in July. We set our record levels the end of July. You hear all kinds of arguments as to should we put the levees back, should we not. Those are some of the issues we are dealing with today.

Real quick on the damage. You will see numbers all over the ballpark. We had about 15,000 homes damaged or destroyed. As Jerry indicated this morning, people still haven't been back into 1,400 of those homes. We've got about 3,000 businesses, 38,000 workers. One of the major business areas that was impacted was the Chesterfield Bottoms, just west of St. Louis here, with a number of businesses that went under in that area.

I think those businesses have moved out of those bottoms as a result of the flood. They thought they were protected by a levee, but they lost the levee, and some of those people have decided not to go back in.

Early estimates for the number of people who lost their jobs, the public interest structure in this state, were about $122 million. I think those numbers have gone up since then, fairly dramatically. In agricultural damage we have seen about a quarter of a million dollars in crop losses; about fourteen percent of the corn and about eleven percent of the soybeans in the state went under. And you can start seeing the number of miles of ditches and things like that that we've got as a result of damage here.

How to respond? We've talked this morning about the role of the federal government. I think they were extremely key players early on. USDA and FEMA were both major players in Missouri. I'm going to take you the next step down. We are going to talk about state reports tomorrow, but I'll give you a little idea of what players we dealt with.

The governor pulled together, very early on, all the state agencies, and said, We are going to respond. Here's how we are going to respond, and here's what we are going to do.

State Emergency Management was in the response mode. All the others came to the table rather quickly: the National Guard, the State Treasurer, the Attorney General, the Department of Agriculture, the Department of Corrections. We brought all the prisoners out to help sandbag. We also had to move one of our major state prisons out of the bottoms.

The local level counterparts were also in place: public works, highway departments, electric and water utilities, police, city fire departments. In the rural areas you really have to rely on volunteers, and key players out there were the local volunteer fire departments. Bruce Peringer, who is here from our University Fire and Rescue Institute, coordinated and responded to those people quickly and did an outstanding job.

The Health Department was the key player from that standpoint early on. We at the university brought them to the table; they brought us to the table. We were partners in handling the broad questions related to water recommendations. We agreed that if we were going to put information out on how you treat water, how you handle water, and so on, we wanted to make consistent recommendations.

We are still working together today. Every one of us got our tetanus shots. At one point, anybody who moved within reach of a public health nurse got a shot. I thought what we needed to do was to set it up with the sandbag lines: line people up, and when you walk by with your sandbag, you roll up your sleeve and get a shot as you go through.

Someone made a comment on agricultural lime; that was actually chat, which is gravel in this state. It was not ag lime that we were using in most of those sandbags, although we probably did use some. We ran out of sand.

To anybody who gets to the floodplain—take a 5-gallon bucket with you! Please take back your own free sample of Missouri sand. We figure if we get enough people down there, we're not going to have to move any of this sand—we can move it that way.

I've described some of the local players. The private sector is another key partner in this. Postdisaster, in long-term recovery, there are going to be three key players in all those rural communities. First, there will be some governmental structure—although it was real interesting during the disaster how many people decided not to run for reelection, or who just left the state, period.

In some small towns over in the western side of the state, people just left and went to Florida. We had to elect new officers real quickly on the spot.

Then there are going to be the churches, the other response groups that are going to be there long-term; when the video bites are gone, they are going to be there, doing the work that they have done, and done very well. And university Extension is going to be in those communities, along with some of the other federal offices, such as SCS and ASCS, that are going to be in all those county offices. They are there as equal partners and working together today.

The players from the private sector—the interfaith council, the Red Cross, the Salvation Army, Lutheran and Catholic Relief—are still meeting, still working together, still trying to meet some of the needs that we've got in our state.

Farm Bureau was a key player. Youth groups are still out there, and some of the industries were very key both in the early response and the recovery.

I chaired the University of Missouri Extension response from the campus level. We quickly brought together all the resources on that campus: the College of Agriculture, the College of BMPA plus Human Environmental Sciences and Engineering on the Columbia and Rolla campuses.

The School of Medicine came on quickly, the School of Social Work, Fire and Rescue Institute, Extension Technology, Extension Agricultural Information, and System Extension Information.

All those groups had representation, at least one at the table. At the height of it I think there were thirty-nine departments, subdepartments, and colleges in that response mode. Early on we set up a conference call to all of our county offices. We also started sending them electronic mail. Electronics are great, but you need to make sure you don't inundate people. Rather quickly I started getting phone calls:

Dave, quit sending paper. You are killing us with paper. I told them to use it for sandbag fill, but they didn't take that as too funny.

Our conference call included both university people and the key state agencies, every Friday morning. This way the county people could tell our people what was going on and what they need to be working on. I think it worked well.

We currently have five regional Extension disaster teams very active in the region. Those teams vary from area to area of the state, but we typically have some representation from agriculture, some representation from home economics—they handle some of the housing-related issues, family management issues, family economic issues—community development, business industry and youth.

What we found when the water went down is not unusual from other states. We found homes damaged like this [slide projected], where it was simply a clean-up job from eight or nine feet of water. Up in that area that we are going to this afternoon there are red tags on the houses, where somebody walked in and said, You can't live in that house any longer.

With other houses you didn't see damage on the outside, but once you got inside you discovered structural problems. We brought in engineering faculty from the University of Missouri-Rolla campus to work with our field staff to go in and help people work through decisions—how they ought to handle these homes and what they should and should not try to fix up.

The clean-up issue varies from home to home. You've got the long-term health risk, where they didn't follow recommendations that we made early on to go in and properly take walls out.

One neat thing about the land grant system is that I could tie in to all the other land grant universities quickly and get help. We tied into Louisiana State University, for example, to bring in their people who deal with floods on a yearly basis. They sent a team of two people who trained field staff on both sides of the state on how we are going to do flood mitigation at homes. They addressed stuff that I didn't even think about, like tearing all that insulation out. Pulling the sheet rock off made sense, but I hadn't thought about tearing the insulation out because we hadn't dealt with it in the past.

Then you have to deal with helping people get their lives back to normal when they have lost everything, when everything they have ever accumulated in their home has gone under water—family memorabilia, all their records. In addition to their homes, in the rural areas we were dealing with their businesses—buildings, livestock operations. Some people have asked me how many livestock we lost and how we dealt with all the dead livestock. We lost about three herds and a couple of chicken houses, but most of our farmers were smart enough to get their livestock out of that bottom. The ones we had a problem with were the landlords who were making investments in the bottoms who didn't know a whole lot about raising livestock there and told the people to leave the livestock.

Structural issues we had to deal with included grain bins that were no longer sitting where they belonged. Buildings were full of grain and how we handled them, what to dispose of, how to handle the personal protective equipment were all issues.

Both private and public water supplies were another issue. Whole waste treatment systems were washed out in some cases. Hazardous materials, whether gas storage or large storage areas down in the bottoms or clean-up in individual buildings where you would find chemicals, had to be taken care of. We didn't find a lot of point source pollution that I'm aware of. Then there were the structural problems after the water went down—the highways, the railroads that were damaged. Some major damage is going to take a long time to recuperate from.

The hard issue, which we talked about this morning, a long-term issue, is people's lives. It is something you are just not prepared to deal with. Where businesses were damaged, some are not going to move back, but others have cleaned up and moved back in.

The whole levee issue is impacting farmers, businesses, and rural communities—where we are going to put them back? How are we going to put the roads back? In some cases we have been dumping gravel and stone for days and weeks just to get across some of those large washouts. In some washouts we have used depth-finders in boats that have measured water forty to fifty feet deep.

If we don't put the levees back in the Missouri Basin, we are looking at about half a million acres that are going to be exposed, with major impact to county governments that you may not think about. That land will be worth less so there will be less on the tax roll for people to get.

These people are very headstrong. Very dedicated people live down in those bottoms. Some of them are going to move back, and we will have to deal with that. Whole communities are going to come back. We are learning about flood mitigation, about raising homes.

Hopefully this [slide] is what it will look like this summer. The "Muddy Mo" will be back where it belongs, the sunset will look appropriately over it,

and we will get back to doing some of the things we love to do.

Bob, our community development specialist in St. Charles, is going to talk about what you are going to see in a little bit of the area today.

**BOB MILLER:** Thanks, Dave. A couple of things that I would like to share with you to start with. You will be looking at some areas in St. Charles County. In the damage that's been done and the prices being paid through emergency relief of the river communities in the country with the most repeat claims, St. Charles County is number one. Two through six are in Louisiana; Vicksburg, Mississippi, comes in at seventh; Jefferson City, Missouri, at eighth; Warren County, Mississippi, ninth; and Monroe, Louisiana, is tenth. So this afternoon you will see the number one county in emergency assistance.

Of the total land mass in St. Charles County, forty-three percent of it is in the floodplain. You don't notice that driving I-70—it is all north of there. The two major rivers come together, the Mississippi and the Missouri, and there is a fourteen-foot drop in parts of the county just north of St. Charles.

Where the river is pretty congested it comes together in St. Louis. [Slide.] An engineer shared with me that if you take all the water that passed this point in St. Louis, you could cover the state of Missouri with 3-1/2 feet of water. That's how much water came through in the flood. Or if you took all that water and put it in a box a mile wide and a mile long, it would take thirty-six miles high to hold all that water.

St. Charles County got a lot of help, all the way from people back East coming in, with whole fire departments, for example, volunteering their time for a week's vacation. They would bring pumps, ladders, boats, and just donate them to the county.

I think you will see this spot today [slide] at West Alton. This whole area was closed up, and I think it will be a permanent closure. You will notice that there is a row of sandbags here, and as the crest got higher they had to build another row of sandbags to hold out the water. One problem we had, as some of you who are from this area know, is that the information on river crests was not very accurate. We would hear about a certain crest, and it would be three feet over that, or whatever. It just was not that helpful.

The Army came in to help, the National Guard. We had all kinds of boats and equipment. You can see a Ping Pong table here being used to load sandbags to take them across the river. They got this antique dozer running and were using it to try to make levees. People used everything they could.

[Slide.] You can see what people tried to do to protect their houses with levees, many temporary ones around the county. Even the railroad, Burlington Northern, raised six foot of track in some places to keep it out of the water; they would put plastic on the water side, to try to keep the water from coming. In fact in some communities, like Old St. Peter's, some historic parts of the town were basically saved because the railroad was raising their right of way there.

Guess what those are [slide]—soybeans under about a foot of water. And here [slide] is what a corn crop looks like after it's been out there a few days.

Tractors were a major way to get places, if you could still get there. The flood depths were anything from zero to 20 feet. And you will see a lot of that when you go out and look at that and some of the buildings and the bins and so forth.

Three mobile home parks in St. Charles County were completely under water. They are buying them out.

We had all kinds of different pieces of water transportation trying to move people and goods and sandbags and cattle and livestock and whatever out of the flood areas. The National Guard brought in some of these ferries to get people across the river.

An additional problem during this flood in the West Alton area was what they called a tornado; I don't know what it was, it was high wind. They had six-foot waves, and this [slide] is the kind of damage that that wave action caused.

A lot of barns and buildings will give you a good gauge of how high the water got, and you will see some elevation going on in the floodplain that you may not have seen before.

[Slide.] Now they are starting to put these houses up. Some of them are actually raising the foundations, and others are just putting them up on pilings, either pipe or wood, and doing various things like building a flood wall around insulations. And you will see a lot of the reclamation work going on.

**PAUL GUNDERSON:** Thank you for an excellent prelude to this afternoon. Now I would like to introduce Mel Myers, who is special assistant to the director of the National Institute for Occupational Safety and Health.

Mel, like some of the rest of us, grew up on a dairy farm, only his was in the state of Idaho, where he was active in both Future Farmers of America and 4-H. He holds a bachelor's degree in agricultural engineering from the University of Idaho and an MPA from Indiana University. He served in the U.S. Public Health Service for twenty-six years, with the early part of his career focused on environmental health issues,

particularly air pollution control. In fact, he was detailed to the EPA from 1970 through 1979.

In 1979 Mel became a planning officer at NIOSH, and he has continued those planning roles in his assistant position to this point. In 1992 he earned the Surgeon General's Exemplary Service Medal associated with his work in planning the Surgeon General's Conference on Agricultural Safety and Health, which was held in Iowa City. Mel currently coordinates the Agricultural Health and Safety programs at NIOSH, part of a federally mandated initiative for which some of us are very grateful, because it provides a good hunk of our livelihood.

**MEL MYERS:** I got up and read the newspapers this morning and turned to a section that was in southeast Missouri. The Mississippi River was over its banks near New Madrid and Harthersville and is not expected to crest until at least Wednesday. This I think is part of the legacy of the flood of '93, which is really what this congress is about and what my keynote is: there is a lot more to it than just '93. Things are going to be happening for two, three, or five years in terms of trying to get people back from the flood.

That is my fundamental message. Many of you probably saw the *National Geographic* issue in January that talked about the "Great Flood of '93." Ronald Vann was quoted in there. He said, "Hurricanes are devastating, but at least they are over with quickly. This is cruel; it just sits around." This is his observation, that there is a difference about this flood compared to other disasters, like tornadoes, hurricanes, and whatever.

Just two weeks ago, near Atlanta, we had what were called the Passion Tornadoes come through, killing about forty people in over a five-state area. This name came from a Methodist church in Alabama not far from the Georgia line, where twenty people were killed during a Passion play being performed.

That situation was a very quick event. People were in there quickly afterwards, and now it is not in the news anymore. That is just one of those contrasts in terms of the flood here.

Janice Barrier this morning mentioned something about a document that she said is "quick and dirty." Another term struck me to associate with the legacy of this flood: this flood is long and dirty. It is going to take a long time to clean up, and it is going to be around a long time.

A proposal by David Hinds talked about how the Extension Service can be a resource. There is a time, right after an incident such as a flood, when a community disappears. Survival instincts take over. There is no community, and then that community builds up again. Extension service can really be used, if trained properly, to try to maintain community.

The term David used, in a kind of informal way, was like a SWAT team. In the public health realm there is a different term, called SWOT, used in strategic planning: strengths, weaknesses, opportunities, and threats. And I thought that would be a good way to frame what we are going to be talking about over these next few days.

A lot of what I heard from different people this morning works into this framework: strengths from our experience, weaknesses in our infrastructure, some opportunities and some threats. I will strike a couple of examples from each of these areas.

We heard a little bit about the Bermuda High being one of the factors in the stall of the weather system over the Midwest. I remember watching the National Weather Service forecasting weather last year. People were interviewing the weather service forecasters, asking, How long could this rain last? Two months they said, and everybody was in disbelief. But the Weather Service was right.

This is a strength—the Weather Service has done a very good job of prediction.

Jerry Uhlmann talked about long-term recovery being probably ten times the problem as compared to response. This is a weakness area that we need to work on.

In the area of opportunities, Gary McClure from FEMA talked about disasters as opportunities, and that is very true. There are a lot of infrastructures, a lot of standardization of formats, a lot of ways of communicating with press. These are opportunities to implement infrastructures based on our experiences.

Another opportunity is the information superhighway and how that can be used. It certainly was used in the planning of this conference, and it is an opportunity to not forget. Think about problems and overload and how you manage those, but it does save a lot of time in terms of callbacks.

One threat is the water itself. *USA Today* talks about sixty percent of the state of Missouri bottomland being covered by sand. There's a quote by Arnold Brooks, age seventy-three, in that article: "You don't anticipate half a crop. It will be twenty years or more before the soil and fertility are built back up." He is an asparagus farmer who had about a foot of sand on top of his soil. He couldn't till it because he would till his asparagus in, but he was hoping it would come back up through the sand.

The real keynote I want to drive home is that this is a long-term problem. We have to think about the aftermath over the next two to five years. There are a

lot of problems: encephalitis, well contamination. A real opportunity is the information superhighway and how it can be used. It may offer a way of getting around all these communication problems we hear about between the feds, the states, and the locals, and between states. There may be a way to network and be creative about how to get information out that is standardized and that people can access easily.

*MORNING*

# Tuesday, April 12, 1994

**GAYLE OLSON:** Good morning, everyone. I would like to welcome you back to the second day of our conference, the workshop day. We will do some presentations this morning to give an overview of some of the things that have been going on in the various states in the Midwest in the last year, and after that it is your turn to work. Discussion leaders are assigned to the different workshops, and we'll explain that process as we go along.

One of our major goals in putting this conference together was to get as much interaction as we possibly can. We've got a lot of great expertise in this room; we want to take advantage of it.

My name is Gayle Olson. I am currently a community development specialist with Iowa State University Extension, covering eleven counties in southeast Iowa. When the flood hit I was the coordinator for the Center for Agricultural Disease and Injury Research Education and Prevention [CADIREP] at the Institute of Agricultural Medicine and Occupational Health at the University of Iowa. It is fun to be able to have worked for both universities, particularly with this flood situation, because there are so many different things that each party contributes to working together as a whole to try to solve problems. It really is interesting to be able to look at them from several perspectives.

When I was the coordinator for CADIREP and the flood hit, our focus was agricultural disease and injury prevention. It was very difficult to not try to do a major effort related to the flood, since it was one of the biggest health hazards that had hit the Midwest for a very long time.

A lot of people, both staff at our institute and others at the National Institute for Occupational Safety and Health, went through a great effort to get some funding to do a special emphasis with the flood and its relationship to some of the other projects. I would like to thank the people who were involved in that. Our main goal throughout was, again, to try to get the different components of the recovery and response effort to work together and communicate with one another so we could do the most effective job possible delivering services.

The Farm Flood Response Workshop was held last fall [1993] at Iowa City. Many of you saw the proceedings of that yesterday. But we wanted to tell you a bit about how that was put together as a kick-off for some of our discussions today, because in many ways this workshop is a continuation. We want to build on things that we learned from that workshop.

[Slide projected here.] You've seen one map of the Midwest; this is another version showing all the counties that were declared disaster areas. This was from last summer; it shows along the sides just a few of the death tolls, some of the property damage, and how many counties were involved, as well as some of the agricultural losses in some states.

[Slide.] That's the capitol dome of Iowa you heard about yesterday, which had the water supply flooded. I think a lot of people felt like they were just going in circles. They would get the flood cleaned up and it would come back and hit them again.

[Slide.] This is an aerial view of downtown Coralville. It didn't just hit the rural areas, but downtown as well. In fact, they had some canoeing races in downtown Coralville last summer.

[Slide.] And this is the real-life version of Noah's ark. People used anything they could to get their livestock and their family belongings out of houses and barns to try to get them to safety.

[Slide.] Many times people moved things to higher ground. The machines over in the lower corner there were moved up onto a higher area of the farm to be out of harm's way, only to have that flooded as well.

Some of the main objectives that we had for last fall's workshop were to establish communication and coordination, to identify some of the resources that were available currently, to find the gaps in those resources, and to develop strategies to fill the gaps. Steve [Reynolds] will outline some of those strategies in a little bit.

We wanted to educate some of the people and enlist their support. Even last November we had some people come in from other states who had worked with different kinds of disaster response, and one of them commented that they hadn't seen anything in the paper for quite a long while and they had no idea that this was still such a big issue. So it is important to let people know that the flood is an ongoing issue, that the recovery will last three to five years, and to enlist their support in it. And, as you heard yesterday, it's important to encourage the consistency of information going out.

[Slide.] Another one of our Noah's ark scenes. This is a family on a very large farm in the Greenbay bottoms area in southeastern Iowa. I think

this particular farmer evacuated something in the neighborhood of 8,000 hogs, in addition to emptying out all their bins, moving the family, moving all the machinery. The enormity of that task is hard to imagine, to try to move that all out.

People were moving belongings off the roof into boats from their upstairs windows and then would watch the house fill up to the roof. Yesterday as we took our tour, we went out there, we saw this flooded area, and we came back to a nice warm hotel. This is a whole year later, and we saw the towns, the roads that are still flooded. I think it is real difficult to imagine the people that have been living like that for a whole entire year.

Say this afternoon we were to go out again, back to West Alton, Illinois, and meet in the fire station down there. I think you would find it a lot harder to concentrate, a lot harder to feel upbeat about things. And that would be just a one-shot deal for us—not having to live with that day in, day out, not knowing what is going to happen next. Having been through the flood that happened last year, seeing the kind of rain that is going on out here today, I think it would be real difficult to not be scared to death about what the future held.

In talking about some of the long-range effects of the flood, I know that some Iowa newspapers have run articles about farm income and how, with the flood, people anticipated that incomes would be down this year. But that is not proving to be the case the way the tax returns are coming in. For some people this was the '92 crop. That's not going to bring a very good price. Other people didn't have that problem—they were able to sell their '92 crops and generally that comes in the '93 fiscal year. So the '93 income levels probably didn't show as much decline as some of the next ones will. That was your '92 crop and this [slide] is what your '93 crop looked like last year. And those are the corn stalks floating around, and this [slide] is what your prospects look like for the '94 crop. I think you can see pretty graphically what the effect would be on your income, not necessarily for '93, but for '94, '95, and possibly '96. So we really are looking at a very long-term recovery.

This is not just an agricultural issue, though. Remember back to the first map when you saw the states that were affected. The farmer's income affects the small towns. You heard yesterday about a school that lost a third of its population; that affects a lot more than just the farmers in the area. It affects the services, the church that wasn't rebuilt, the implications for the overall community. When you add all those small communities together, the implications for the state and the region can be huge.

"Well, if you really want to help me feel good, Doc, how about loaning me $100,000 to get my crops in." We talk a lot about stress, about mental health, and think of counseling services and those sorts of things. And those are very important aspects of the recovery. But a thing that we have to realize is how closely those two are connected.

You can do all the mental health counseling you want, but if you send a family back to live in some of the swamped houses that we saw yesterday, with some of the financial conditions that we've just talked about, it is real difficult to talk about managing that stress without taking away some of those stressors.

So I think we have to see how this is a very integrated problem, which means we have to attack it with a very integrated solution for the recovery.

The problem is, we ask these questions in gibberish and get replies in gibberish. That is one of the things that we have heard about over and over again when people are going for assistance—the volume of different applications that they need to fill out; how many times they need to be turned down by one agency before they are eligible for another; that in some ways some of the recovery efforts are actually adding to the stress level.

[Slide.] A bottle, and it looks like it's got a note inside! Probably from someone else stranded on an island. It's from a farmer in Iowa or Missouri. Iowa, right now, doesn't have this kind of weather. In fact, in southeast Iowa where I live, we have had people who have gotten in the fields and seeded oats and have been praying for rain. There is not enough moisture to even germinate it. So we are looking for some rain. I know there are a lot of people in Missouri who would love to send it north to use.

Another thing I like about this slide is the idea that being on an island can refer not only to the flood perspective, but to people who are still in the situations where they need help. Sometimes it is in towns like we saw yesterday, where houses still are flooded, where residents haven't been able to get back in.

We farm in southeast Iowa, nowhere near a river. We weren't flooded, but our crop yields were very severely affected by the weather, the wet, cold growing season, the disease, the storage conditions. The highest yield we had was 133 bushels per acre of corn. That doesn't sound too bad to some places, but when you think that the average is usually 180 to 200, that's a pretty significant cutback. And we were some of the lucky people. A lot of places were much more severely affected than that.

A sense of isolation, that others have forgotten, that one doesn't know the ramifications down the road is another important concern that we need to think

about. It is not only the island of being separated by the flood waters but of being separated from the potential success of the rest of the United States.

That summarizes some of the things that we have tried to accomplish and what we took into consideration when we were putting together the workshop in Iowa. Some of the situations have changed; some of them have gotten worse. Some of them have gotten better, but I will let Steve talk about what we found out through some of the results of our workshop.

**STEVE REYNOLDS:** What I would like to do today is expand on the very brief presentation that I did yesterday. I want to give you some background in terms of how the workshop was organized and how we developed the work that we did there. I'll provide you with some specific information on the recommendations and then talk about what we found out with our focus groups.

In terms of the organization, we did a number of presentations much more technical in nature than at this week's workshop. Colleagues and I from the University of Iowa addressed concerns that we had developed as the flood progressed, related to water quality, grain hazards, and indoor air quality. Paul Gunderson from the Marshfield clinic [National Farm Medicine Center and Education Foundation] gave an excellent presentation on mental health and stress and provided us with a lot of background on the research he had been doing on suicide in farmers.

John May from New York described his Farm Partners program, which I believe that we will hear a little bit more about today, and Dave Baker came down in the midst of all the scrambling he was doing to keep up with the flooded conditions in Missouri and provided an overview of the status, how his activities were organized, and what the effectiveness was.

We ended up with fewer attenders than we anticipated, partly because everybody was still in the response mode and also because it was very difficult to pull off a conference in less than a month. We had a very, very short time frame to do this. In terms of issues we jelled into three work groups: one focused on environmental health issues, another on general safety, and a third combining economic and stress and mental health.

A number of the main issues in environmental health were developed as a result of the working groups. Regarding exposure to spoiled grain, hay, and spillage, initially we focused on the farmers and the potential exposure to microbial contamination and some of the other physical hazards associated with working with the spoiled grain. Then we started looking at the other populations that would have potential exposure problems, including individuals involved in transportation, the terminal sites, and preparation of animal feed. There were special considerations related to confined space issues and respiratory protection for the people who specialize in disposal of this type of material.

Indoor air quality got a bit of attention, and we have had continuing concern from the populations of Iowa and the region about indoor air conditions.

Some of the immediate problems resulting from the flooding were related to clean-up activities. People had some awareness of microbial problems in cleaning up residences, but they didn't always consider that their clean-up activities themselves were hazardous. In Iowa there were a number of cases of carbon monoxide poisoning from people using power washers inside an area where there was not proper ventilation and they had a combustion source.

Additional issues included microbial contamination from asbestos being damaged and dislodged from insulating materials, lead-based paint, and household chemicals. A wide variety of potential exposures existed related to indoor air and residences.

Water quality was another primary area of concern. With damage to wells and drinking water systems throughout the area, the possibility of contamination with pesticides, with bacteria, with nitrate fertilizers, was ever-present. We saw some slides yesterday addressing EPA's response to hazardous waste and the concerns over storage tanks for fuel and oil along with hazardous waste sites and hazardous materials.

Infectious disease was also a main concern, especially in areas where so many sewage treatment facilities had been lost. We haven't done, as far as I know, a real good job of surveillance, but we are starting to see cases of very rare things like leptospirosis and anthrax, which we are attributing to the flooding in Iowa.

A second concern related to infectious disease involves pest infestations. When the waters came up, rats and snakes and all the other insects and little organisms were seeking higher ground also, and they were congregating in some of the same places where people were. We heard some interesting stories from our focus groups about trying to get snakes out of a house so the people would have a bedroom to stay in. But the snakes just kept coming right back up there.

In terms of general safety hazards, there were some obvious problems, but others not so obvious. Some of the immediate ones related to concerns over injuries, trying to operate equipment, and trying to perform clean-up procedures on wet and muddy land where you just didn't have the support that you were used to.

We had a number of fatalities where people tried to use heavy equipment under these muddy conditions. In one case someone was trying to use a tractor with a chain to pull another piece of heavy equipment out of the mud; the chain broke and recoiled, struck the individual, and killed him.

We have continued to have some problems with the use of heavy equipment in wet and muddy conditions. I know in some parts of the states there is now a concern over a lack of rain, but in other parts the water has never really gone down, and we still have some of these overly wet conditions.

Anytime you mix electricity with water, you have a hazard. We had downed and damaged power lines. One of the things that we had learned from Hurricane Hugo was the potential problems with emergency generators and backfeed of electrical currents. So things can be learned from previous disasters to be applied to future protection.

Children provided a special safety concern. Often they had inadequate supervision; people were too busy trying to deal with the response to keep a good eye on what children were doing. Children were also involved in the response clean-up themselves, many being asked to provide physical activity that was beyond the scope of their size and their capabilities. Children were of special mental health concern; I will talk about that issue in just a second.

Emergency services was another subject that came out of these issues workshops. Many emergency services providers felt they had insufficient training to provide services under these conditions. They were having a lot of difficulty getting to people who needed their help and, for example, trying to deal with extricating someone from a tractor accident under these conditions. So training for emergency response personnel was a very important issue.

Finally, in terms of these work groups, we did have a number of people who tried to deal with stress and mental health issues, and one of the key observations was that we were seeing a large population of normal people being exposed to very abnormal conditions. And, as a result, we were seeing some major problems.

One of the predictions (and maybe some of my cohorts from Iowa can update us on this) was that because of the flooding, because of the weather conditions in general, somewhere in the range of ten to thirty percent of the family farms in Iowa would not survive these next several years and we would lose these people from production. This in turn will have a tremendous impact on the economy and the way of life in this part of the country.

There were some special needs populations. Migrant workers are a group you don't typically think of in some of the Midwestern states, but they are a significant part of the workforce. They were tremendously affected; there wasn't work for them up in our area.

Children, again, were another special population that needed to be addressed. And a group that we termed the "frail elderly" again were people that we thought deserved some special attention. We heard stories over and over again of elderly individuals who were having a lot of difficulty coping with the changes that they had to make in response to the flooding.

In addition to the immediate concerns to be dealt with in terms of the physical and mental energy that was going into the clean-up and the tragic losses, there were also the long-term concerns, financial burdens. Some people haven't been in their homes for over a year—they have been displaced that long. So there was a lot of emphasis on the fact that this was going to be a long-term problem, and, especially from a mental health and economic standpoint, it was going to be severe.

I gave you a bit of an overview on the recommendations yesterday, but I would like to go into more detail. Each working group came out with a series of recommendations, and there was a lot of overlap, so we grouped them into some comprehensive recommendations. We have also broken out some that tended to be very specific for each of the three issues [environmental health, general safety, and economics and stress and mental health].

One overarching recommendation is that when information is available, and from a lot of sources, it needs to be consistent and coordinated. We have heard from Dave Baker, for example, concerns about how to chlorinate a well, and you get different directions from different people. I was at a conference at Ames, Iowa, about two weeks ago, talking about how to clean up a wet basement. Every person had a different recipe for a solution to decontaminate microbial growth. So there still is a need to coordinate and make consistent the information we are providing to people.

Some of the specific recommendations regarding information are as follows: One, we should assemble a resource guide that contains all the technical articles and inventories of services and keep this as an active document. It should be accessible by both electronic and printed media.

One of the other recommendations was to develop a central clearinghouse for flood information that would institute a peer-review process to help provide some quality control and reliability. The Uni-

versity of Iowa is planning with support from NIOSH to try to take the lead on these areas and implement them.

In terms of facilitating communications and linkages, there was a recommendation that meetings should be held regularly to bring all the players together. And this workshop is one of the first follow-ups. In addition, the establishment of a central electronic communication network was recommended; that indeed is being established and we are going to hear more about it here.

There were recommendations for research and evaluation under a number of areas. One was to provide a better knowledge base in terms of the effects of the flood so that we could really learn the scope of the problem, get a good idea of the prevalence of the issues rather than trying to respond to anecdotal complaints, and gain a better direction for setting policy.

There is also a strong need to evaluate the effectiveness of the services we are providing. We put that into a research category, too, so we had some specific recommendations in terms of implementing surveillance systems to identify emerging illness and injury patterns as well as providing initiatives for individual investigators to support possible prevention and intervention.

We also provided some recommendations for planning for continued support and assistance to go on over the next several years, after the end of some of the responses that we originally perceived to be very short-term. You know, we looked at FEMA as a sort of short-term issue, but we heard something a bit different yesterday about that: FEMA does have some long-range plans.

Those were the main points of our comprehensive recommendations. In terms of work groups on specific issues, we recommended that, from an environmental health standpoint, the universities, Public Health Departments, and federal agencies become involved in performance and exploratory walk-throughs in environmental assessments. They should try to identify problems that could be used for training inspectors and providing information to the public, and this could also provide a baseline for more thorough environmental assessment programs that could be held to, again, provide us a baseline in terms of impact and ongoing problems.

Regarding general safety, we recommended that existing resources and procedures, and specifically the Extension disaster handbook, be reviewed and updated to be sure that the information is as applicable as possible. We recommended that emergency medical service providers have specific training provided to better equip them to deal with providing response services under such abnormal conditions.

From the standpoint of stress and mental health, we recommended that there be better coordination between the mental health and outreach specialists and other specialists in environmental health and safety. We need better coordination and a better understanding of what each one of these specialities does and would do.

We also suggested that training be provided to teachers and other school personnel to deal with children's mental health issues. These people are some of the gatekeepers, essentially, for the children, and they were the ones that have the most access to them.

Talking about gatekeepers, the issue of trying to provide mental health services to farmers raises a lot of difficulties. As we have heard, farmers are a very independent, very proud group, and it is difficult to come in as an outsider and reach them. The New York Center for Agricultural Medicine's Farm Partners Project provides a very good model for gaining access and gaining the trust of people in farming communities. This project was recommended as a model for implementation in the Midwest. And again, I think we are going to hear more about it today or tomorrow.

Yesterday I briefly went through follow-up procedures. We do have procedures that are being disseminated to agencies and organizations that are involved in the follow-up of the flood. We are disseminating these to the governors' offices and the Senate offices throughout the region. We are proceeding with trying to develop a resource directory. We have the electronic network, and we are here today to continue the process.

The last thing that I want to do before turning the floor back to Gayle is to give you a little bit of information from the focus groups, the individuals we talked to who were affected by the flood.

This is something that I felt was very important. To a large extent, what we tended to do with the workshop could become an academic exercise. We tended to be isolated, and we were concerned that we were not realistically addressing the needs of the individuals we were trying to help. So we tried to go out and talk to individuals throughout the state of Iowa. With assistance, especially of the Extension Service, we organized meetings with farmers in the Tama, Pocahontas, Lee, and Wapello counties. I think a fairly good mix of people attended, though there is always some bias because the kind of people who come to the focus groups are the ones who have something to say.

We have tried to emphasize the positive as well as the negative, but we didn't hear a lot of positive feedback from these individuals. In general the

farmers tended to be very disillusioned with both state and federal governments and relief agencies. They tended to rely primarily on their communities, on their friends, and on the local Extension Service.

County Extension agents figured very high on the list of who farmers turned to, and they got a lot of praise. Farmers also turned to the Soil Conservation Service and the Agricultural Stabilization and Conservation Service. These three organizations were really the key ones beyond family and friends and local businesses.

The churches were another group that got a lot of praise. The Catholic relief agencies, the Lutheran relief agencies, Mennonites, and a variety of church organizations were particularly praised for being there and for not paying any attention to faith. Regardless of anyone's belief, these groups were there and were willing to help.

Regarding the need for improvement, farmers thought that the relief efforts failed to address a lot of the long-term problems that they saw. A particular complaint was the issue, or the perception, that relief was contingent upon financial records that really were not pertinent to the farmers. Evaluators were looking at tax returns from 1992, 1993, and that really had no meaning for the farmers. They were going to see problems, as Gayle indicated, in 1994 and 1995.

Those in the focus groups also indicated that all the paperwork and bureaucracy they had to deal with was very complicated, time-consuming, and redundant. They talked about having to fill out the same forms over and over again for different agencies, different people. They felt that in some cases they ran into rudeness in addition to a runaround. They thought that part of this came from the fact that agency people did not understand farming or farmers; they didn't understand how complicated a business farming is.

Attenders also had perceived confusion and miscommunication among the relief agencies that they were dealing with. They thought that local agents had a lot of concern for them but were not communicating very well with the central programs or the headquarters doing the planning. They thought there was a lack of understanding and some miscommunication.

They also expressed being promised things that didn't materialize. One farmer, for example, needed to do some repair work, and he had been, he thought, promised funds to help pay for it. He went ahead and did the work and then was told he couldn't be paid because the work was done. But he had needed to get the repairs done, and he couldn't wait three or four months. And so he perceived that he had been given a promise of financial support that was reneged on after he completed the work.

Some farmers also pointed out that they thought there was some in-fighting among the government agencies that were responding to them. So, again, they didn't see coordination but rather antagonism between agencies.

There was also a strong perception that, although FEMA was being very active in the nonrural areas, FEMA was not very applicable to farmers' problems and didn't address farmers' needs.

To end on a more positive note, let me recap the things that did work well. Farmers indicated that the churches, in particular, provided a lot of very useful services. The Salvation Army and the Red Cross were praised. The county Extension agents and emergency aid distribution programs were needed. We did get some positive feedback on FEMA's Disaster Unemployment Program; people were very happy with that.

In Iowa there was a lot of praise for the individuals staffing the hotlines, for the public health administration and the hospitals providing tetanus shots and other types of infection control procedures, and for schools, especially Iowa State and the University of Iowa, providing assistance for secondary and grade school students.

A lot of anger was directed at groups such as the U.S. Army Corps of Engineers. Blame was attributed to the Corps for the damage that the farmers experienced. And whether there is any validity to the claims or not, there is a strong perception out there that groups such as the Corps are really catering to constituencies other than the farmers. There is a lot of irritation over that issue, and the perception needs to be dealt with.

Now I will turn proceedings back over to Gayle.

**GAYLE OLSON:** One of the staff at the University of Iowa commented after participating in the focus groups with the farm families that this can't be an academic exercise. We have to go further than that, make it mean something. What we want to accomplish at this workshop is to go home with more of an action plan, with ideas on some next steps.

So that is part of what we will be developing today and tomorrow. But now I do want you to do an exercise, not an academic exercise. I would like everybody to take out a piece of paper—it doesn't have to be fancy—and something to write with.

I would like you to write your name, over and over and over and over. See how many times you can get your name written. Everybody ready? Okay, let's start writing. [Time is allowed to elapse.]

Okay, you can stop now. Some of you might think this is an example of how many times you have to write your name to fill out forms, but that is not my point today.

Now I would like you to do another step and switch your pencil or pen to your opposite hand, and we are going to do the same thing. Are you ready? Go. [Time elapses.]

Okay, you can stop now. If you look at those two sets of your name, is there a difference in the quality? A little bit?

Did it feel comfortable to write with your opposite hand? No. Is it something that you would have ever done if you hadn't been forced to?

This is a very tiny example of change, exemplifying how a forced change makes us look at things differently, makes us feel a little uncomfortable. The quality of what we do is probably not as good. Life is more stressful. Look at the changes that have occurred through the flood. Whether it's the water conditions and the situations people have to live with or agencies having to serve needs they haven't served before or talk to other agencies that they haven't talked to before, there are lots and lots of changes that all of us have had to deal with in the last year.

One phrase that I heard provided one of those "Ah-ha" experiences that sort of clicked with me. A speaker told me one time, when you're in a sort of a controversial setting, listen like an ally. Don't observe other organizations and other presentations or other agencies thinking, Oh, well, we did better than that, or, They could have done so much better if they could have done this. Look at the overall problem as something that we are all trying to work together on. And listen like an ally as people give their presentations and talk about their ideas.

Our purposes are twofold today. First, we are trying to help people in various communities who are still dealing with the recovery process in a lot of different stages. Some are still flooded out of their homes; others are back to some sense of normalcy but are still trying to put all the pieces back together. And we are seeing how some of the federal and state policies play out at a local level.

Yesterday Kevin Tonat made the comment that the airwaves don't stop at state borders. And I think a lot of different things don't stop at state borders or county borders or any other kind of border. And when you see at a local level how all the different policies and agencies play out and have to fit together, I think that is really what we need to be aware of—how it's not trickle-down, it needs to be trickle-up.

Our second purpose is to figure out how to better deal with disasters. Tonat, again, yesterday said that the middle of a disaster is a difficult time to try to start talking to somebody. It's a hard time to get acquainted. Well, we are a little beyond that. We are at the next step now, where we have hopefully already made some of those initial contacts and we can develop those relationships. We can listen like allies and try to figure out how to better move forward, to deal not only with the flooding situations that might reoccur—that are reoccurring here in Missouri right now—but also with other disasters, so we can keep those linkages in place and make them even stronger.

I think another thing we really need to work on is how we can put these systems in place in a way that helps empower people to solve their own problems rather than becoming more dependent and looking always to the outside for ways to get back on their feet and move forward again.

We need to evaluate what we have done and learn from our mistakes as well as our successes. We have done a lot of things right; I don't think anybody is going to dispute that. But I think anybody would also see that there is room for improvement. Mel Bromberg talked yesterday about strengths, weaknesses, opportunities, and threats, and I think that is one of our biggest and best opportunities—to look at what we have done, what we have learned from it, and how we can build a better system in the future.

The last thing I would like to leave you with before we go into presentations from the states is that none of us is as important as all of us. That synergy of everybody working together is really a key in how this whole thing can play out. We truly have some good opportunities to take this chance for change, where people are looking at things differently, thinking about things differently, and beginning to work in effective planning, effective networking, and a lot more interdependency on one another to build the communities stronger than they were before.

As an overview before the discussion groups, we have asked people from a variety of Midwest states to come and give 5-minute presentations on what kinds of efforts have gone on in their own states—what successes they have had, what uniquenesses, and what they have learned from it.

First we have Mel Bromberg, from the University of Illinois Cooperative Extension Service in Urbana-Champaign, where she is an Extension associate in drinking water and health. When the flood hit, Mel was also named the flood information coordinator.

**MEL BROMBERG:** Our goal as part of an outreach effort with the land grant institution was to lend a hand and extend our knowledge. Our system is set up so that specialists, educators, and local leaders all

responded to the flood within the Extension system when it hit.

Our specialists are Ph.D. thematic specialists in certain areas. Our educators are master's level, and our local leaders are equivalent to Extension agents, who handle either one county or many counties.

When the flood hit, Extension became immediately involved with the preservation of health and safety of all the residents in the affected areas. Every Monday morning we did a teleconference with our educators, our specialists, and other state agencies—IEMA [the Illinois Emergency Management Association], FEMA people if necessary, insurance department representatives, public health officials. We tried to garner as much information as possible from all sources. And everyone from the education clusters and from the units came together on Monday morning to talk about problems with the flood. We tried to maintain that teleconferencing for as long as possible.

The pace of the teleconferences has eventually tapered off and we no longer do them. If the flood picks up again, as it might do, we might reinstitute the teleconferencing to talk about the problems that the counties are experiencing and where the educators can help out.

Let me give you some facts about Illinois. The total damage for the flood has been estimated at $1.5 million. It was the largest callout ever of National Guard troops in the state. Losses are estimated at $1 billion and still climbing. About $565 million in corn and soybeans alone was estimated as a loss. Road and bridge damage is about $250 million. We had 12,000 Illinois residents who lost jobs, and 911 businesses were closed from June to August; 116,000 residents were without drinking water for some time. We had one confirmed death as of August 5 and I learned yesterday that four or five additional drownings occurred in Illinois, so we are probably up to five or six for mortality.

Four percent of farm acreage was affected. Ten communities were evacuated, which was about a total of 12,200 people and a third of the state; forty-two of 102 counties that you see [on the slide] are declared disaster areas. Eleven major water utilities were knocked out, with additional stations being knocked out sporadically. We had levee breaks which disseminated towns—the towns you probably heard of are Niota, Meyer, Hall, Grafton, and Belmire. FEMA government trailers were set up in those towns; we had 11,000 residents requesting disaster housing assistance.

These are just some of the little details that we had in Illinois. Things are still climbing; we haven't gotten all the numbers in.

One of our responses was to set up four satellite centers; what you see there on the [slide] map is the four starred centers with a coordinator. Illinois Extension Service put them up in the Quad Cities (bordering along the Mississippi), Quincy, Edwardsville, and Alton.

We also set up an additional satellite center in Hall, Illinois, because at the town's request we were asked to come in and do building assessments and provide information.

Our work with state agencies was myriad. The minute we heard there were problems we started coordinating with public health. We started coordinating with EPA. We coordinated with the insurance agency, with the Illinois Department of Agriculture, Illinois Energy and Natural Resources, Department of Children and Family Services, the Small Business Administration, Department of Commerce and Community Affairs, Soil Conservation Service, Agricultural Stabilization Conservation Service, Farmers Home Administration. We were on the phone with all these people trying to collect as much information as possible to give out to our flood victims in any given area.

Extension started an internal hotline, a toll-free number for Extension educators and Extension unit leaders to call and ask where they could get sources of information. We ran a toll-free phone guide for anybody—they could call up and say, I need the number of the Springfield Department of Insurance. We would give the information out.

What kinds of other things have we done? We had family counseling and farm financial counseling going on. We had tax information provided. One of the information coordination linkages that we started on our Internet system was a flood bulletin board with our archived information in factual areas. So anyone who was on the Internet could access our information bulletin board. We had about 11,000 access through the bulletin board, and I think about 3,000, or 300, international ones. We had international people taping to the Illinois Flood Bulletin Board.

We had a lot of people accessing the information and needing this on the Internet system. And what we did, later on, after the system was up for four or five months, was to start archiving some of the data, as the fact sheets and the information became older and less timely.

We also held tax workshops for our educators and provided tax guidance and counseling assistance so that our educators in the counties would be able to help flood victims with filling out loan forms, preparing tax returns, and giving them financial counseling and assistance.

In the area of child care we set up day care sites for people who were displaced out of their homes. This allowed parents some respite time and children some play and socialization time.

On the water quality front, we did well-disinfection demonstrations in four counties. Once people were interested in going back into their homes, we demonstrated how to shock chlorinate. We coordinated with the Public Health Department, the Illinois State Water Survey, and the Illinois Department of Energy and Natural Resources; and of course Cooperative Extension and the local sanitarians at the Public Health Department were involved.

When the Department of Commerce and Community Affairs in our state, which is the designated money agency, learned that they were going to receive money from the federal government for flooding, Extension Service participated in that meeting, and we went over to find out how the loan money was going to be distributed in our state.

Subsequently we became involved with FEMA buyout programs, and we tried to tell people how those would work and provide updated information with the regional planning agencies who were coordinating some of the housing assessments. We developed our own farm assessment tool because the FEMA tool was inadequate for assessment at the time. And we had our agricultural engineering department go out and do the town of Hall, about 300 houses, for farm assessments. That tool is still available and is here today for anybody who wants to look at it. FEMA is, I think, planning on using it for the future because it is a unique tool for building assessments and building structures.

As other speakers said yesterday, the flood allowed us to forge new alliances with other agencies in the state and locally. I think the patterns you see in Illinois for how we reacted are similar to those of other states; our activities really were not unique—they were just specific to the needs of the constituents in our state for Extension Service.

We hope we were successful with forging alliances at warp speed to help people out as quickly as possible. We are continuing to try to keep recovery efforts at the top of our agenda in Extension Service in Illinois, and we hope through this consortium we will have other ideas and other ways and means of anticipating people's needs with flooding in the future. Thank you.

**GAYLE OLSON:** Thank you, Mel. We also have another person from Illinois today. Roger Hannan, who started with the Farm Resource Center in Mound City, Illinois, during the farm crisis, has found that the services offered through his organization are still very much needed in relationship to the flood.

**ROGER HANNAN:** Farm Resource Center was created in 1985 to do outreach mental health counseling to farm families, and we have been in business doing that since that time.

In Illinois the mental health response to the flood came about because the Illinois Department of Mental Health had a rapid response team, which I was a member of, and as director of the Farm Resource Center I brought our agency into that rapid response team effort.

When the Presidential Declaration occurred, this team was responsible for getting a mental health intervention plan in place and applying for FEMA money to carry that out. At the same time as we were putting the application together we had to have some kind of initial assessment. Farm Resource Center, being our outreach program, was already in place out in the communities, and we did the initial assessment for this grant application in process for FEMA.

In addition, we began providing outreach mental health services to the flood-affected families before money even flowed from FEMA into Illinois for intervention.

Our goal as a rapid response team was to put together a coalition utilizing the twenty community mental health centers located in the flood-affected area and coordinate the response that they would do into one single plan of operation. My agency and I were designated to be the coordinator of the mental health response in Illinois.

I met with the individual community mental health center directors to get their commitment or their opinions as to how this ought to be handled in their territories. Some agencies opted to ask Farm Resource Center to do the outreach in their community, without them ever getting involved; others, we ended up with 18 community mental health centers that signed on as part of the Project Recovery effort, our mental health response in Illinois.

The rapid response team became the core, our central point of operation, for the mental health response. We met weekly. Farm Resource Center collects each week data from the individual community mental health centers as to how many individuals they are serving and in what capacity. During the immediate service grant under FEMA, 21,172 individual contacts were made by this coalition of community mental health centers and the Farm Resource Center. That immediate service grant ended January 15, and since that time we have had

10,794 individual contacts in an outreach mode in the flood-affected area.

The Farm Resource Center has a statewide toll-free line. The longest distance call we have received was a suicide threat from a lady in North Hollywood, California, who was affected by the earthquake. Some well-meaning FEMA individual decided it would be a good idea to spread our number around in California. We asked them to please retract it because we didn't have the wherewithal to do earthquake intervention in California.

One of the things that I am very proud of is the relationship and the support that we have had with agencies like the University of Illinois Cooperative Extension. These folks have been real troopers; everything Mel said they were involved in, they were involved in very well. It is not often that an agency can get involved in as many things as they have and do it well. But their reputation has skyrocketed as a result of their commitment to people in the flood, and I'm pleased to report that we are working cooperatively with them.

Another thing that Farm Resource Center is proud of is the 3,340 documented volunteer hours during the first six months of our intervention. That is roughly 89 person-weeks that we brought to bear on this flood-impacted area. These volunteers gave us credibility in the communities where we were doing outreach. As local residents they opened doors for us so that we could better serve the people that we wanted to reach.

Training was an important issue, and we have had Diane Meyer from California, an expert in the mental health field, come to Illinois a number of times to do training. We also have done a lot of debriefing of our outreach workers to keep them happy. That's a part that sometimes gets overlooked; we need to remember that we need to cry together with our staff and get some of these real terrible experiences to the surface so they don't continue to eat away at people after they go home from work.

Finally, I would like to say that Farm Resource Center's approach to service delivery has always been outreach, and in my judgment outreach empowers the person that you are reaching out to. They are in charge. You bring them into an office and they are no longer in charge—you are in charge. Remember if you will the last time that you went and had your annual physical. You were sitting in some little room, half dressed, sitting on a table on a cold white piece of paper. You could hear people moving around out in the hall, but you never knew when they were going to come in and finish up whatever it was they were going to do with you, or for you, or to you, so that you could go.

That's not empowerment. You are pretty much disenfranchised at that point. But if you as an individual invite someone into your home, you are in charge. You can ask them to leave when you are finished talking with them, or if you don't want to talk with them you just don't invite them in. So empowerment is the thing that has made our outreach effort in Illinois work. And we are working very hard to keep our program out there, and we are making the individual contacts with people, we are following up.

**GAYLE OLSON:** Thank you, Roger. I know from talking to folks in Illinois that the services your organization has offered have been very positively received. Next we will move on to Iowa, represented by Margaret VanGinkle, who works for Iowa State University Extension.

**MARGARET VANGINKLE:** I will try to breeze through some things from my perspective as an Extension agent who was involved in Iowa with the flood. I think I had a unique experience because I am a coordinator of the Rural Concerns Hotline and also a resource management specialist. The hotline was started in 1985 because of the farm crisis. I was not an originator of the hotline; I have been coordinator for about six years.

It has been very interesting to go into that position and stand back and kind of watch. A lot of times you can kind of predict some of the issues that may be coming down the road in three to six months. But I can't say we predicted the flood.

However, at the hotline we started seeing an increase in our calls a year ago last fall [1992], before the flood hit. Most of those calls were financial calls—family problems, intergenerational problems, and lots of indicators of stress and financial concerns.

Then when the flood hit, the calls continued to increase. Our first experience with the flood happened up in northwest Iowa, where we saw flooding first out in the farm areas and the small communities. We were dealing with it through the hotline and hearing some of the problems and situations that were happening up in that area.

I think when you look at the flood crisis you can think about the stages of grief and predict them according to when a community was hit. In northwest Iowa, we initially had people who were busy pitching in and helping each other. Then we started getting very angry calls.

We go calls from small-business people, saying, All everyone talks about is those farmers out there. What about my small business? We are having a problem, and nobody cares. We had reports from people saying

that it was taking as long as 100 hours to fill out the small-business loan application. And, on top of cleaning out a business and dealing with all the other details, maybe their home was flooded, too. So with all these stresses, having to spend all this time filling out the papers became an agitation.

And then as we hit that third stage, the reality stage, the whole thing happened in Des Moines, where I live. That really came to reality for me then, as I was dealing with some personal things. I was personally very fortunate that our home was not flooded. My husband and family have a business in Des Moines; it was not flooded, but we were without water for twenty-one days. My husband's business was shut down entirely for three days because people were not able to get to work, and then it was a week or more before they were back to normal functioning again.

And a lot of people at the business were also trying to deal with no water at home. I think in Des Moines the flooding occurred on a Saturday night. We saw streets and bridges closed. A lot of people couldn't get across town.

Saturday night our water was shut off, and I was amazed at the cooperation and how quickly things happened. Water jugs were showing up in the parking lots on Sunday afternoon. People were able to get water.

As resource management specialist, I and our nutrition specialist had worked with our public television station. Right away on Monday morning we got a call asking, Can you come in and make some TV spots? They needed to give people guidance on how to boil and disinfect water, what you can use that water for, how you can use rainwater, how to flush your toilet when there is no water. So we did make some of those TV spots right away.

Develop close coordination with your local media; that's real important, because they are going to be there right away when a crisis happens, and if you can be a part of that they know who to contact.

Our governor had assigned that every government department would be involved with the flood and meet together, and Extension was also assigned to be part of those government task forces. I served on the human services task force; Jim Meek was on the mental health task force. And I think that was a big benefit, working together as a unit to coordinate a lot of efforts and getting to know a lot of agencies much better.

Somebody mentioned that we have a lot of Spanish-speaking people in Iowa who come up to work for the seed companies in the summertime. When everything was flooded out, there was no work. How were we going to deal with that population?

We set up a hotline through the local school and staffed it with Spanish-speaking teachers. Extension advertised the hotline on all of our posters. But through the whole situation we have gotten only twelve calls. We found that maybe that wasn't the best service for the Spanish speakers; they seemed more prone to work with each other and stay within their communities. But we did try it, though we found out it didn't work.

Another service that Extension and the state did together were a lot of satellites. Since we have satellites all across the state of Iowa and in each of our offices, agriculture-related agencies did a satellite, trying to help the farmers think about the processes and procedures that you need to go through.

SPDC had a satellite that Extension helped develop. We have had some other satellites on housing, basement problems, and related issues.

The hotline also worked closely with the Department of Mental Health after the flood, and we have a contract now with them to have more stress counselors on the line. So the hotline has three functions: One is information referral, which we always have had. We also have an attorney, and then we added stress counselors right on the line. People could call and ask for the stress counselors.

When the counselors were added I wondered if people would really use them, because we always hear that Iowa people are very conservative. I have been surprised at how many people, including farmers, have called and asked specifically for the stress counselors. One nice thing that we offer is anonymity. People don't have to give their names; they can call, talk about a problem. Hopefully we are a first step. If people need more we can then perhaps convince them to get some more professional help.

Extension also developed flood centers around the state, including family financial counselors. We have about thirty-five of those centers across the state where they are doing family budgeting. We also have some family farm associates through Extension who do financial counseling for farmers. We were having to charge for that service but now we are able to provide it free of charge.

I just might end up by saying that, though we did lots of different things, coordination is so important. If we can coordinate with other agencies, other government agencies, if we can work together before disaster happens, we can call on each other to help each other out.

We have seen at the hotline some indications of increased use of alcohol and substance abuse. I saw that increase in calls gradually after the flood hit. And since Christmas, we have seen some of the signs go up.

Working very closely with Substance Abuse, we have done a lot of things for the hotline by advertising and marketing, doing some special TV spots. They had some funding that we didn't have, so they are using our number; we are working together. They are marketing for us, and we are trying to recruit and market for them, too. Coordination and cooperation is very important.

At one time they were considering getting rid of the hotline. The farm crisis was over, there didn't seem to be any more problems, so we downsized. But am I glad that hotline was in place. We were able to coordinate and cooperate with a lot of other agencies in our state.

The other thing I want to mention that helped at the hotline was doing some coordination with FEMA through three-way conference calls. As all of you know, in the middle of a disaster people tend to not understand or communicate very well, and these conference calls really did help. People would call our hotline really mad at FEMA—you know: FEMA told me that they would do this and now they are not going to do it; I went ahead and did it and now they are not going to pay for it.

So we were able, many times, to work out that problem as the mediator in a conference call. The hotline operator would repeat the question, repeat the concerns, help each party, calm them down a bit.

So technology works. I think we had a firsthand chance on working with that technology, and coordination really is a big plus in a disaster situation. Thank you.

**GAYLE OLSON:** Our next speaker, John Kerr, is the assistant director in the Planning Branch in the Division of Emergency Management in Minnesota. He has been in emergency management for the last 20 years, and he started his career at Iowa State with the fire service there.

**JOHN KERR:** Good morning, everyone. The Minnesota flood experience in '93 is really a bad news–good news situation. The bad news is that while you all were still able to go about your normal business we were having to fight the flood. We had to start a little earlier than the rest of you. We were dealing with some of the issues back in April and then May. And our declaration process began in June. So we started earlier, but on the other hand our problems are probably minuscule compared to some of our brethren to the south, in Illinois and Missouri, in particular, and Iowa.

In fact, at a recent conference I followed a speaker from Missouri, and I had to admit to the group that I had been feeling kind of sorry for myself and we had been feeling sorry for ourselves as an agency. But I felt a lot better after I listened to the fellow from Missouri make his remarks. Our problems were indeed, when we put them in perspective, very minor compared to many of yours.

The Division of Emergency Management is, as I'm sure is true in many states, responsible for coordinating disaster preparedness response, recovery, and hazard mitigation. And I thought I would comment briefly on a couple of the phases that we were involved with in this disaster, the recovery phase and the response phase, and a few of the lessons learned from our perspective.

As far as the response phase is concerned, I felt that we did a few things right this time around, perhaps better than some previous disasters, in that we activated our State Emergency Operating Center very early on. We had coordinating meetings with a number of state and federal agencies very early on and had daily briefings. That process was very important as far as exchanging information, being aware of what other players were about, and everyone being on the same page in terms of the status of the disaster.

I will say that I think we probably over the years have been a bit parochial in our views. When it comes to disaster programs, frequently we tend to think that this is kind of our ball game and we go about just doing our own thing. We are a bit ignorant about all the other players out there and about the fact that we can all do a much better job by being a little bit more inclusive in our operations. So I think one of the lessons we learned this time around is that there are a lot of other players out there that we need to be involved with. And if we don't, not only do we lose something as a division, but I think our citizens lose something in terms of the quality of the services they receive. We have become very open about acknowledging our need to reach out more and to involve some other players, and I think we will be doing that next time around.

I'll devote most of my emphasis now to the recovery phase, which was very unique to our experience in Minnesota. In the past we basically were responsible for administering the major FEMA programs—the Public Assistance Program, the Individual Assistance Program, the Hazard Mitigation Grant Program—and we kind of did our own thing working with FEMA and a few other agencies.

This time around, as you all know, Congress saw fit to make a whole lot of additional money available to a number of agencies. The Federal Coordinating Officer from FEMA and then another federal agency representative decided that maybe it would be a good

idea to put together a small group of federal and state representatives who could meet regularly and start looking at some of the issues of disaster recovery, long-term disaster recovery, and hazard mitigation and talk about how monies might be dispersed most efficiently and effectively.

This was not necessarily a revolutionary concept, but it was something we had never done in our state. Back in about the third week of August of last year, we put together this body known as the Minnesota Long-term Recovery Grants Coordination Group. There are about five federal agencies and six state agencies in the group.

We sat down very naively that third week of August, thinking, Well, in a week or two we will get some of this out of the way and then we can get back to our normal business. Well, we are still meeting. In fact, we have begun to scale back to three meetings a month after meeting every single week. So it has turned out to be a monumental process, in spite of the fact that our disaster is relatively minor compared to some of the other states.

Let me give you a little flavor for what is involved. At this point about 275 project applications have been submitted to our committee. And when I say project applications, I am talking about projects involving hazard mitigation or long-term recovery—infrastructure projects, acquisition relocation projects, various types of hazard mitigation projects, housing projects of one sort or another. We divided our committee into subgroups: an erosion subgroup, a housing subgroup, an infrastructure subgroup, a mitigation subgroup, and a health and human services subgroup.

We maintain our list of 275 projects on a computer tracking report, and when we meet we review their status. We try to make some group decisions as to our priorities so we are not off doing our own thing. Right now our focus is on the acquisition/relocation area, and for about twelve communities we are in the process of acquiring homes and getting them out of the floodplain.

A second piece to this long-term recovery process was to hire flood recovery coordinators around the state. They work with our emergency management directors, who are pretty much overwhelmed by dealing with the normal disaster programs. We have about ten of these flood recovery coordinators in the state, and they are kept more than busy working with the communities and getting applications in from them to the committee for the various types of projects that I referenced earlier.

A number of people have talked about the overwhelming number of forms and the confusion that is out there. I think we are facing that and see that we need to make some efforts to cut through this pile of paperwork that not only our citizens but also our local governments are having to deal with.

We are also trying to work with some of our federal brethren to explain that we need greater similarity in the program regulations, in environmental review issues. We find ourselves wanting to work as closely as possible with state and federal agencies but sometimes handicapped by widely divergent standards and regulations.

Nonetheless, a number of our projects—for example, our acquisition relocation projects—will involve funding from three or four state agencies, the Department of Commerce and Economic Development Administration, HUD, and FEMA. So we have achieved some success in getting multiagency participation in individual projects.

This has been just a thumbnail sketch. As I said, compared to other states I think our problems are relatively minor. In the public assistance area or public property area, we have about $50 million in public property damage. Fifty-seven of our 87 counties received a Presidential Declaration, and about 62 counties received an Agricultural Disaster Declaration. As someone commented a few minutes ago, this recovery process is going to be a matter of years, not weeks or months. Thank you.

**GAYLE OLSON:** Thank you, Paul. When you were talking about your group schedule, that you thought you could do it quickly and not have to worry about long-term meetings, it occurred to me that in many ways, this is like lots of other areas of our lives—the more we know, the more we find out that we have yet to learn. I think we are kind of working through that stage yet.

Next we have Paul Schleer to represent Missouri. Paul is the deputy director for the emergency management organization in the state, and I know he has already been busy on the phone trying to keep abreast of the flooding. He says that the six inches of rain since Saturday in the Jefferson County area has already caused some flash flooding. So, Paul, we know you are in action on the spot.

**PAUL SCHLEER:** The Missouri flood of '93—we may have to reevaluate that to the Missouri floods of '93/'94. We started our flooding in Missouri a year ago this week. We had our annual conference down at the Lake of the Ozarks with all the local officials and local directors. The last day of the conference two counties' officials had to leave to go back and address the flooding problems that were just starting in their

jurisdictions. One county was St. Charles, our neighbor to the north.

We had our first Presidential Declaration on May 10. It was a small disaster, five counties, and we thought it would be a good break-in period for our new employees. So we got them out. We got that pretty well taken care of, and before we could even breathe a sigh of relief, the water hit the fan.

We got our second declaration on July 6. During July there were two record-setting crests on both the Missouri and Mississippi Rivers. With the counties that were affected by the rivers and the widespread flash flooding that ensued even into the fall, we ended up with declarations in 112 of the 114 counties in the state.

We were not ready for the magnitude that we were faced with. Forty-nine deaths were attributed to the flooding. We ended up with 35,000 applications for individual and business assistance in the state. Because of all the problems that ensued, we did not close out our application period until February 15 of this year. I want to tell you a little bit about what we do, how we worked, and how the state worked in response and going into recovery.

First of all, our emergency management agency is not a response agency. It is a coordinating agency. We are the ones who work with the locals to get their needs assessments, to see what agency can respond, whether state or federal, and go from there.

Some of the Missouri state agencies involved in response or recovery were Health, Mental Health, Family Services, Aging, Employment Security, Natural Resources, Conservation, Fire Safety, Water Patrol, Highway Patrol, Corrections, the Attorney General's Office, Insurance, Design and Construction, the National Guard, Missouri University Extension, Agriculture, and Economic Development.

I am proud of the job that Missouri did in the response phase of the disaster, from both the state and local levels. They did their job. We were fortunate in Missouri that a man by the name of Ivan Browning was wrong about an earthquake, but he did spur getting our response mode mechanism in operation. The locals did their plans. We exercised both with local and state agencies and again with federal agencies.

We all had our act together. We had volunteers from all over the United States. We were even international: when I was at the St. Charles County emergency operations center on July 4 we got a call from a volunteer from Ukraine, wondering where his twenty-five volunteer sandbaggers were.

All over we did a good response. There were minimum glitches. One thing about the flood situation of '93, though—it was a slowly rising thing, as opposed to an immediate occurrence like a tornado or an earthquake. You had time to think ahead and see what you needed. We were fortunate that way.

FEMA, taking deserved and undeserved hits as a result of Hurricanes Hugo and Andrew, is not about to let that happen again. They got very proactive. In the eleven years I've been in the agency I've never seen FEMA that proactive. Of course that also caused problems, when you start changing the rules in the fifth inning and the state level has to implement the changes. It causes problems, but we worked through them, and it did help the people.

Now to the recovery phase. That is a different story. We were not prepared. Recovery in normal disasters that we have experienced was fairly quick and easy. Water came up and water came down. But some of these houses were in water up to two and three months. People could not get into them. This wasn't a localized thing—it was widespread up and down the Missouri and Mississippi Rivers.

Many mental health problems occurred because of the stress associated with people having their lives so disrupted. We felt the best way to alleviate the stress was to get the recovery started so people could get back to their normal lives. Well, as an outgrowth, and maybe just a little bit late in the act, there were concerns about people out there who had fallen through the cracks.

So along about January the governor formed a flood partnership task force for all of the state agencies that had recovery response activity, the volunteer organizations and private agencies to come together to figure out, first of all, whether many people out there had dropped through the cracks. Well, really they hadn't. But what we were able to do, and what we are still working on, is to set up a communication network to bring everybody together. Right now we are fortunate that we have been provided with the Missouri university E-mail network system. We can get immediately out to each of the county Extension offices and communicate with locals in that way. With the contact that we have had with local unmet needs committees, we have been able to come up with an effective method of dispensing the donated funds that came in from outside sources. We are now working those through. We ended up with about $218,000 that we call the gap payments, to take care of the needs still out there that cannot be addressed by anybody else.

Another thing the task force has done, and we have never had this before, was to assemble a disaster recovery resource guide to the state agencies and other organizations that have recovery response activity.

What is going on in the future? If the state legislature looks favorably upon us to give us additional manpower, state emergency management will go into another facet that has never been tried before. That facet is to put in a coordinator with responsibility of keeping this movement alive—to keep the contact going with all the associated agencies, to keep the resource book updated, to meet periodically with the different agencies involved to make sure that everything is still up to snuff.

**GAYLE OLSON:** Thank you, Paul. From South Dakota today we have Gary Whitney, the division director in the Division of Emergency Management. When I asked Gary if he wanted me to say anything special in his introduction, he said jokingly that I could tell everybody that he walks on water. And I don't think that's an all-together inappropriate quality in somebody with emergency management in the Midwest right now. So, Gary, thank you for coming today.

**GARY WHITNEY:** Most of what I have to say, Paul and John have expressed as far as emergency management is concerned. We have the same problems in South Dakota as they have in Missouri and Minnesota. Some of you may not know a lot about South Dakota, so I will give you a brief background.

South Dakota is a fairly large state, about 250 miles north to south and 400 miles east to west, split down the middle by the Missouri River. That's interesting, too, because I think for the last four or five years the states of Iowa and Nebraska and Missouri have been suing the states of South Dakota, North Dakota, and Montana because we were not releasing enough water out of the dams on the Missouri River.

I can tell you for a fact that every one of those dams is full now, and in the dam six miles above the capitol, the lake behind it is only 270 miles long and it rose eighteen foot last year. So if we let some down the river imagine what would have happened in Nebraska and Iowa, let alone Missouri if it had been here yet.

Our main industries in South Dakota are agriculture, tourism, and gambling. The floods actually started in 1992 for us. We had a Presidential Declaration in 1992 for flooding, and then we had a tremendously wet fall, and agriculturally the area that is affected by the flooding is everything east of the Missouri River. West of the Missouri River is a whole different world—prairie, wheat farmers, and ranchers. East of the Missouri River it is pretty much all real crop farming and hog raising.

So the floods started actually for us in 1992. We went through the first one in 1992, then the wet, wet fall, and we came into the spring and we kept getting by. We would get a hard rain or a snow melt and we would get it drained out. Then the next one would come and we would finally get that one drained out. We were doing pretty good and we thought we had escaped it.

On the 3rd of July we had a band of rain about sixty miles wide and 100 miles long that dumped fourteen inches of rain. That was the straw that broke the back. We didn't have the type of flooding that you had in Missouri and Iowa and Illinois. Most of what caused us the greatest problems was flash flooding—that great amount of water in a short amount of time with no place to go.

The greatest number of people affected in South Dakota were affected by the flash floods. They destroyed quite a few houses and disrupted a lot of people's lives. But we didn't have water standing in the houses as they had in the other states.

It continued to rain all of July and August, and as with everybody else it moved on north up into North Dakota and got those people too. The lakes were filled, all the dams were flowing over, roads were going out.

We ended up with thirty-nine counties, as I stated, declared, including four Indian reservations. If you haven't had that in your state, it is another dimension that you have to deal with.

We set up a toll-free number and a task force that ran all during the flood. Once we had Presidential Declaration, we downsized it somewhat, but we still continued to run the toll-free number for everybody.

The three state people who have spoken so far are from different FEMA regions. I am associated with Region VIII out in Denver. We have a great working relationship with our FEMA representative. We could sit down and work out any of the problems that we had, most of which were lack of communication. I think once we got working through that it settled down real fast.

The one thing that bothered me, the head of the governor's task force plus the division director of emergency management, was what somebody mentioned earlier. All of the different funds were opening up and all of a sudden we had money for mental health, for buildings, for buyouts, whatever. At one point nobody knew who had what money and what it was for or how to spend it. We had the money, but how are we going to spend it?

Eventually we had to sit down with all the state agencies that were involved to start finding out who

had what money, what it was for, how many were redundant of other programs. I'm not so sure we have it worked out yet. The money is nice, but it is tough to figure out what to do with it sometimes.

One thing that Roger Hannan from Illinois mentioned was very important. We talk a lot about the mental health aspects of the victims, of the workers. In the small states, like mine, everybody is working on everything. So you have a volunteer. Maybe he not only lost his house, but he has been working for three days to try to keep the school from going. So these people need a lot of attention in services like stress debriefing.

You even have to use it on your state and local staff, all the time. I don't think we can emphasize that enough. I think sometimes we forget about the workers and the emergency workers because we kind of think they are tough, they can get through it. Nobody is that tough.

So that gives you a brief oversight of South Dakota, some of the problems and some of the good parts.

**GAYLE OLSON:** Thank you. Our next and last state representative today is Roger Williams, who is a professor and chairman in the Department of Health and Human Issues at the University of Wisconsin-Madison. Roger grew up on a dairy operation in Wisconsin and attended the University of Wisconsin at River Falls. He got a degree in agriculture education and taught high school in Darlington for two years. After he finished teaching there, on his way out of town it was flooding. He and his family were in the flood, and as they tried to get out of town, they were among the very last people to cross the bridge before it was closed. So he brings his own flood experience into this situation too.

**ROGER WILLIAMS:** It is good being here. I want to thank the conference organizers and Cooperative Extension staff from various states for showing us slides and providing the tour yesterday and also providing the rains to personalize what we are about here today.

Our experience in Wisconsin hasn't been as traumatic or as photogenic as the experience downstream. It has much less dramatic, as was mentioned by the speaker from Minnesota. But it is some of our water that helped to create your situation downstream and it is some of our fine silt loam that is helping to improve the soil of Gary Meechem's land near West Alton.

What I would like to emphasize, right from the start, is that our state is less affected by the floods of 1993 but it was very deeply impacted by the heavy rains of 1993. That is a fine, but important, distinction. The major losses and the major problems in the state of Wisconsin have been with farm families and agriculture where there is a loss of the crop investment—that initial crop investment in the spring of '93, the loss of the actual crop in the fall of 1993, and the loss of crop quality. Crop quality is significantly lower because of the heavy rains.

The loss of farm families is another significant effect. We are experiencing more farm auctions in the spring of 1994 than in probably any other year in our history. And last is the loss of top soil, a major loss that won't be an impact just for the next three or four years but for the next 100 to 200 years. And that is a significant loss. Some of that topsoil is down here in Missouri.

I want to give a brief overview of the flood situation in our state, and then a brief overview of a FEMA-funded project to respond. I'll show you quickly five major areas where flooding occurred. First the Pecatonica River in southwestern Wisconsin, which experienced some major impacts. A little further down in the southwest is Darlington, the community where I taught and that we left back in 1969 when the flooding occurred. It was deeply affected, as was Blanchardville, also in southwestern Wisconsin.

That happened in June of 1993. A little bit later on some of the communities that were affected were Black River Falls and right in that area. The Black River Falls received significant flooding, and on Father's Day in 1993 the grove area of Black River Falls needed to be evacuated. There was significant damage in that immediate area.

The third area impacted was the Wisconsin River. Barabou was significantly impacted by a major flood—ten inches of rainfall on July 7 resulted in flash floods and a death in Devil's Lake State Park.

Also affected was the Mississippi River on the far western side of the state. Glen Haven, a small community in Grant County, was hit by a heavy rain on July 8 and 9. A four-foot wall of water came down the Mississippi and swept away about twenty different cars, and there was major impact in terms of houses in that area.

In southwestern Wisconsin's Spring Green and Lone Rock, there were homes that experienced long-term basement flooding. They were constantly pumping out basements. And then a final area would be Monona, on the edge of Madison, which experienced some significant flooding. They were sandbagging much of the later part of the summer, from July on.

As I mentioned earlier, the major financial impact was in agriculture—eighty-six percent of the damage, with an $800-million loss. There were 1.5 million acres lost due to flooding or excessive rain—fifteen percent

of the total value of agriculture. We had a four-inch rain in September that caused the cancellation of our Farm Progress Days, the first time in history that has ever happened. And there was significant loss for many people involved in the event.

We had 805,000 acres of land suffer significant erosion of ten tons per acres or more. I would emphasize that issue of top soil loss, which I haven't heard mentioned by others. It is a major loss in our state.

Private residential damage totaled something like $46 million. There were 4,700 homes damaged or destroyed, and 2,500 individuals had to be evacuated during the flood. Private business damage accounted for about three percent of the damage, $31 million. Public damage, things like roads, bridges, public buildings, and dams, was $43.6 million—something like forty-four percent of the total. And finally, utilities suffered $9.2 million in losses, something like one percent of the damages.

As was mentioned by several people on the bus tour yesterday, the impact to tourism has been major, in the state of Missouri and the state of Wisconsin. It is guessed that the flooding in 1993 has caused $250 million in lost tourism.

I need to remind you that the flood in our state was not a single event that affected Wisconsin farm families. Rather, it capped off ten years of stress. If there is one point I really want to make, it is that. This is the event that capped off ten years of stress, beginning with the plummeting land values and the credit crunch back in 1984 to 1987, a severe drought in 1988 and then a bit of recovery in 1990, but then dramatically reduced milk prices in 1991—$10.00, $10.50 a hundredweight. And then the drought, frost, and winter kill in 1992, and finally the heavy rains and winter kill of alfalfa in 1993. That's why we are seeing a record number of auctions in our state in the spring of 1994.

The Farmer's Assistance Hotline has been one of the most powerful resources in the state of Wisconsin. It is always a good barometer of what is happening with farm families. Five to seven hundred calls were made per month from 1991 to 1993. That's a pretty powerful statement of what is happening with farm families in our state. In March of 1994, last month, the hotline received 900 calls. A staff of about five individuals are taking all these calls.

There are problems with basics, such as food and fuel. The irony is that farm families who put the food on the tables of other people can't put food on their own. We're seeing greater demands for food stamps and health care, greater demands for grants from such programs as Harvest of Hope.

The state hotline has been experiencing an increasing frequency of five emotional problems: depression, withdrawal, substance abuse, domestic violence, and suicidal tendencies. Those five areas have continued to be named over and over with hotline calls in the state of Wisconsin.

Let me make a brief commentary on the FEMA-funded grant that we have been part of for the last few months. It is basically an $800,000 grant, run through the State Department of Health and Social Services, with several objectives. One of these is to link agencies. As many other people have suggested, this crisis has created an opportunity to get agencies working together. It has helped to link the state Department of Health and Social Services, the state Department of Agriculture, Trade, and Consumer Protection, and the state Department of Public Instruction, as well as the university system, the United Migrant Opportunity Services, and so forth.

The Department of Public Instruction has had educational programs with kids as well as training programs with counselors, nurses, social workers, and other service providers. The Department of Agriculture has added two part-time staff outreach workers and counselors. United Migrant Opportunities Services is doing direct outreach and counseling with migrant families throughout the state of Wisconsin.

Our piece of this, at the University of Wisconsin, has been to develop what we are calling a Farm Family Support Network, with a number of different components. One component is to provide training for professionals in health and human services in understanding the crisis that farm families are facing and responding to it. Because we have had a strong emphasis on chronic mental illness in our state, we have not been very well geared up to responding to farm families in crisis situations.

A second component has been to assist the gatekeepers such as veterinarians, milk haulers, milk inspectors, ASCS staff, and SCS [Soil Conservation Service] staff in identifying problems and making referrals to state agencies. We did a series of ten trainings with about 500 people in those two groups, professionals in the health and human services arena and gatekeepers. They were very helpful in terms of gearing people up. As much as anything it was cultural sensitivity training in how to better understand farm families and respond to them.

We are also working to develop farm family support groups, both reinitiating groups that existed at one time and starting new ones. And, finally, we are hiring two individuals to serve as farm outreach workers as well.

I have brought two or three handouts that you might find to be helpful. One is a stress checklist, second is a paper on developing farm family support groups, and third is "World of Wisconsin," a cultural sensitivity piece on how to better understand the farm culture and the farm experience and how to respond to it.

I've given a few of the highlights. Let me also comment on a couple of the strengths and weaknesses. One of the weaknesses was the delay in getting FEMA funding. We had hoped to have funding in November, which would have allowed us to gear up a response for farm families. The biggest time for farm families is January, February, and March. But the monies didn't arrive to our agency until the end of March, which created some complications in gearing up a response for farm families. We expected the problem, so we went ahead with the training back in February, even though we didn't have the money in hand.

Another problem would be that the mental system is focused primarily on chronic mental illness, rather than on farm families or people with any kind of situational problem.

And a third problem would be that there has been a differential level of response among counties in different agencies. You could include almost any agency in that—Extension, ASCS, community action agencies, or whatever. The response has been outstanding in some counties but negligent, nonexistent, or less than active in other counties.

One of the most important strengths has been our farmers assistance program, which has been in place since 1984. It has been a very, very important resource for farm families. We are trying to improve it by mobilizing the professional human services system and by mobilizing the gatekeepers to better utilize the farmers assistance system.

Another strength is the FEMA grant, which has given us an opportunity to begin better networking and better coordination between agencies.

A final strength has been the responsiveness of the gatekeepers and health and human services personnel. That would not have been the case three years ago, but when we did this series of ten trainings in February of 1994, 500 people responded. There is an awareness at least of the need to respond at this point in time, and that is very encouraging.

In a nutshell, that's it. Thanks much.

**GAYLE OLSON:** Let me explain the process that we are going to do next. First we are going to be breaking into issue groups, with you selecting the issue you are the most interested in. What we are looking for is an information exchange between providers of flood-related services by issues. The choices will be emergency services and disaster response, environmental health services, general safety services, information services and communication, and mental health and social services and crisis counseling.

Each group will have a facilitator, who will guide you on how to follow through with the procedure.

We would like each of you to use the forms provided to record information on each issue—any services addressing certain aspects of the issue, any gaps in services that need to be identified, and any of the things that relate to either needs or assets in dealing with those needs. Then we will use those as the basis of discussion in some of our state workshops and in trying to get a better handle on who the players are and what kinds of things they all are doing.

# *LUNCHEON ADDRESS* Tuesday, April 12, 1994

**DAVID BAKER:** Our speaker for lunch today, Pam Helmsing, works as an editor and economist for Doane Agricultural Services Company, here in St. Louis. Pam Helmsing grew up on a small farm in east-central Missouri and attended the University of Missouri-Columbia for her degree in agricultural economics. She lives nearby in Marthasville on the Missouri River; last year the town was underwater but her home, on a hill, was not.

Today Pam will present the results of research she has done to assess the flood relief effort and determine what actions are still needed.

**PAM HELMSING:** I am glad to be here today, and I am excited that this conference is taking place. The cameras are gone from the floodplains, and a lot of people tend to forget that the flood of '93 is not over. We saw some cameras go back out last night, and if you watched the 10:00 news you know that we are looking for the Mississippi River to crest about four feet over flood stage by the end of the week. The Big River is about ten feet over flood stage, and there are some indications that we will have a new wave of flooding that may let us use in the near future—much sooner than we had hoped—some of the information that we are putting together now.

As Larry said, I work for Doane Agricultural Services Company. We are a publishing company that publishes mainly newsletters for farmers, so my interest and involvement in the flood stem from that aspect. We were doing all we could to help farmers recover from the flooding.

Our main product is the *Doane's Agricultural Report*, a subscription newsletter sent to about 25,000 farmers every week.

We are here today to talk to you about the socioeconomic impacts of the flood. Very quickly I'm going to run through some slides that are observations that we made during the flooding during 1993.

The first time that I really internalized what was going on here was while flying back from a meeting in Denver in July. [Slide projected here.] This is the Missouri River. I took this out of the window of a commercial airliner, but you can see the channel of the Missouri River, the tree line where the river should have been, and the water where it had expanded out at that point. This is in the St. Louis area. The St. Charles FEMA office allowed me to borrow the next few slides, aerial views of what the St. Charles area looked like at that time.

You can see that it was not just farmland but of course communities that were flooded, places that had never had any past indication that they might flood. People responded phenomenally in the sandbagging efforts that were out around the community, around the clock.

This effort got good TV coverage. The networks would get information out so that people knew where to report and could respond very quickly to be helpful.

As we have heard already in the conference, it's important to have helps for the helpers, such as relief stations for the sandbaggers. One aspect of the flooding that is unique for farmers is that they were seeing not only their home or only their business being flood and perhaps wiped out, but their home, their business, their retirement plan. Everything they have in their community, their sense of community, their churches, everything was tied up into these farmsteads that were flooded. Many had already been struggling. They were offered low-interest loans, but as one farmer said to me, I've already got a loan that I can't pay off. Another low-interest loan isn't a solution to my problem. I can't afford to take on that much more debt, no matter what the interest rate is. I still have to pay it back.

Once you got out and started talking to these people about the overwhelming effect of having this much water around their land, it was an emotional time, for an extended period of time. It didn't just hit and go away. They felt very powerless. It gave people a lot of time to think about and dwell on their problems.

Some fields turned into lakes. A lot of farmers had a good sense of humor over that—it was their only way of protecting themselves against the devastation.

The entire state of Iowa was declared a disaster area. All of it was not floodwater from rivers; a lot of it was just excessive rain. That caused a lot of damage to crops, even those that weren't close to rivers and creeks. There were seventeen million acres in nine states that were flooded. That includes two-and-a-half million acres of corn and almost two million acres of soybeans, for a total of five million acres of the eight major crops.

An additional 600,000 acres of corn and two million acres of soybeans went unplanted because of the

excessive rains. The farmers just couldn't get the ground planted. The net result was 7.8 million acres of farmland that was not productive at all last year. It either did not get planted or was totally wiped out because of the excessive rains.

In a crop tour at the end of July, we found a lot of soybeans less than a foot tall. The crops that did get in were delayed due to late planting and the weather. We used to say, You can't rain out a crop. But we did major damage to this crop by excessive rain. Some fields did go on to produce a crop, but the uneven stands also hurt your pollination, your maturity. So we had both reduced quality of crops and reduced production.

A lot of weed pressure also came through. You couldn't get in to cultivate the fields; you couldn't get in to do anything with them. They might have been able to rescue a lot with herbicides, but you couldn't drive on the fields even to do that.

We even found a few fields in the north, particularly in the Wisconsin/Minnesota area, that were so wet in the fall of 1992 that farmers did not get their crops out. So even before the excessive rains there was a lot of stress due to the weather going on. This was a long-term problem, not just something that happened last year.

I know we have someone here who has dealt with Hurricane Andrew, whose damages have been estimated at $20 to $24 billion. The last numbers that we were able to find on the Midwest flood were around $20 billion and rising. There's a lot of discrepancy on what you count on these kind of figures, but as best we can tell, this ranks among the very top in dollar value in natural disasters.

The agricultural loss part of that is around $11 billion. There were $1 billion in losses to the transportation industry, which includes $200 million to the navigation industry, $300 million to the railroad industry, and $350 million to roadways. We saw some bridges where the force of the water moved the structure several inches, which would have to be repaired and straightened out to become useable and safe again.

The most comprehensive numbers that we have seen on flood losses are over fifty lives lost, eighty towns completely flooded—thirty-eight of them essentially destroyed—1,860 businesses closed, 20,000 jobs lost, and almost five million acres of cropland flooded.

I am going to draw your attention here to the production number for corn. You see that in 1992 we produced 9.5 billion bushels of corn. The net effects of the flooding in 1993: You can see that the acreage was down, a lot due to the prevented planting, and about two-thirds of a crop was produced in 1993 as opposed to 1992. This is a major reduction in the income to farmers.

People argue, Yeah, but the price went up, so the farmer came out about the same, didn't he? That's not true. We went through a little balance sheet and said, Okay, what if a guy got a 100% yield, what return could he expect after his production? In this example, we see that on 100 acres of corn a farmer might net about $13,800 if he got a normal yield. If he got only half a yield, which happened in a lot of these fields that were rain damaged but didn't actually have flood water come through them, the income goes down to about $3,800. That's a difference of about $10,000, or about $100 per acre less than he would have gotten had he produced a crop. He went through all the same work, he put in all the same inputs.

If he was prevented from planting, or if he lost the entire crop, the government programs did provide a safety net so that he made some money. But, still, if you're talking about a farm with 250 acres, you are talking about a net income for this guy of $12,000—below the poverty level—and he also has debt to service on his machinery, his equipment, his buildings, and his land.

The social impact I hit on a little bit earlier—towns and homes were destroyed, people were displaced. There are a lot of things that I'm sure you've already addressed. One thing I do want to make note of is that people who were flood victims, and farmers in particular, were almost tried in the popular press, particularly the newspapers. The major newspaper here in St. Louis ran a three-part series, listing the names and the amounts that people received from their ASCS programs. The articles made it sound like these people had somehow ripped off the government, that they didn't deserve what they got. I read the entire series, and not once did it mention any amount of loss for any of these people. So here they've got their names in the paper and they are being almost assaulted, accusing of having done something wrong, as if they somehow contrived this flood so they could profit from it. That was a very real social pressure, pressure we don't put on a lot of other victims of other situations.

The Real Flood Relief Communications Alliance was started by a man named Jerry Neff at Monsanto. Monsanto originally decided that they would donate $1 million to flood relief and then went looking for the most effective way of using the money. They also pledged another million dollars for matching funds if farmers, individuals, and other agribusinesses would donate to the fund. That second million dollars was matched in less than two weeks with donations from

all types of individuals and agribusinesses, including $500,000 from one of Monsanto's biggest competitors, Seva Corporation.

To date, more than $5 million has been collected and distributed for flood relief. Part of that effort, a small part of the money, went to a newsletter that Doane published; Monsanto covered the printing and postage costs to send it to 100,000 farmers. To make sure that our efforts were on track, that the American Red Cross's use of this money was on track and meeting needs, several studies were conducted by Market Directions, a research firm in Kansas City. Susan Spalding, the president of that organization, is here with me today. We are going to talk about some research that Susan did in November to see how well the agencies were doing, how well we were doing communicating information to them, and what needs remained to be addressed.

Our newsletter, named *Road to Recovery*, ran for three issues. It contained agronomic tips, how to estimate disaster payment, what agencies deal with what types of situations and how to contact them, how to remove sand and debris from fields, how to handle stress, and many other helpful tips and techniques.

Four hundred farmers were questioned in a comprehensive survey. Susan also personally interviewed a couple of dozen farm families to help form this research piece so that we would be asking the right questions. We asked farmers what agencies they had had contact with. We found, not surprisingly, that most of them had contacted ASCS, SCS, and USDA, the ones that they were familiar with. Fewer had contacted other agencies that are normally out of the realm of their business. Then we asked them how satisfied they were with the agencies that they contacted. Seventy to seventy-five percent were very satisfied with ASCS, SCS, and USDA; sixty-one percent were satisfied with Disaster Unemployment, fifty-six percent with FEMA, and fifty-four percent with the Army Corps of Engineers.

Reasons for dissatisfaction included not qualifying for the assistance, or the system was slow and they still didn't know if they were going to get any help, or the people in the agencies were either unsympathetic to their situation or didn't understand farming. Certain questions that you might ask urban people seem absurd to a farmer. So he felt like he was in a different environment, or that he was not going to be understood, therefore he was not going to be helped.

We asked what other types of volunteer organizations they had received assistance from; we found about eleven percent from church groups, ten percent from the Red Cross, eight percent from Salvation Army. Ninety percent of the people that we interviewed were very satisfied with the help that they got from these groups, which is borne out by all other research that I have seen. One reason they were more satisfied, we have to note, is that their expectations were also different. The organization's help was an unexpected thing, where you get to expect a little more from the government agencies. The common attitude is, I paid taxes, I expect them to do something, and do it right away.

The emotional well-being of farm families was a disturbing finding. It was not unexpected, though the magnitude of some of these responses is unexpected because people tend to say, I'm doing fine, even if they are not. And these people, to a large degree, admitted that they weren't doing so fine.

This survey was conducted in November 1993. We found three percent who indicated they were not under stress. Nine percent said they were not very stressed. The remaining eighty-eight percent said they were either somewhat stressed or under extreme stress, with thirty-two percent falling in the extremely stressed category. Then we asked them, Okay, how is it going to be about six months from now, as we move into planting time? That would be about May, based on when we did our survey. Only twelve percent said the stress would lessen over the next six months. Twenty-five percent said it would stay the same. Forty-three percent said it will depend on some other condition—the weather, if the levee gets repaired, if I get financial assistance. And a full twenty percent expected the situation to get worse.

Research after other major disasters shows that there is usually an increase in things like spouse and child abuse in areas that have been affected by a disaster. So the social impact of this flood, as well as the economic impact, are both very important in the Midwest.

So what's left to be done? Driving around over the last few days, you have seen that there are still a lot of homes that have not been repaired. I drove past farm buildings this weekend that are still in need of repair, down by Washington, Missouri. Debris keeps coming up, and there's going to be weed pressure from who knows what came down the river with that fine Iowa soil that we are now farming.

We did have a lot of weed pressure come up last year. The weeds did not grow big enough to produce seeds, so we might have actually gotten rid of a few of them that way last year. So there could be a little bit of a plus from that.

There is soil compaction that needs to be dealt with. There are levees that still need to be repaired. We saw on the news last night that water is coming back

through breaks in levees as the rivers come back up. Sand and gravel brought into fields still needs to be hauled out.

This plow [shown in slide] is capable of plowing five foot deep, and they were basically not hitting solid earth. They were just plowing through sand on that. This was in late November.

A lot of equipment is required. This offset disk [shown in slide] will turn over soil a couple of feet deep, but the costs are very high. That little plowing operation that I showed you cost $600 to $650 an acre to turn that sand under and get a field back. And then you are going to need to come in and finish it with big equipment. An ordinary plow or disk would just get lost in the crevices that are left from turning that over. So there is a lot of expense to reclaiming this land and being able to farm it again.

That concludes the main remarks that I wanted to make. Susan, do you have anything that you would like to add?

**SUSAN SPALDING:** I want to give you a little bit more insight about the personal interviews that I conducted. As Pam said, the premise of the research, and why we went out to talk to people, was to make sure that we were clear about farmers' needs and how they differed from the urban disaster. Most disasters that the American Red Cross has dealt with—and dealt with well—have been in urban environments, and they have not had to reach so far out into the rural community. One of the biggest issues that we found, and that you can think about in terms of documenting the process and thinking about the future, is that when we deal with a rural environment, people are spread out.

The communications linkage fell apart initially, and they were really having a hard time getting all the pieces in front of them and knowing who to contact and when and where. We did our first research in August, in northwest Missouri and southwest Iowa and then across the states. Then we worked in the southeast corner of Iowa and brought in people from Illinois and Missouri and Iowa. Our first issue was just to find out how they were and what their immediate needs were, so we could communicate that to the government agencies as well as the American Red Cross and any other people that wanted the information.

Many farmers had of course lost not only their businesses but also their homes, and so we had to network simply to find them. County agents helped us, as did some of the farm equipment and farm chemical dealers. We brought farmers in; we talked to spouses in couples and also one-on-one, and they were surprisingly open. But I can see now that they were open because they were in shock. They were still in a very numb stage of the process. They were still coming off of the levees, trying to save them.

When we repeated the research in November, by that time most people had been able to get back into their farms and assess things, so the emotion was quite different. They went from shock to a wide variety of emotions, from anger to distress to almost a flippancy of, It's going to be okay. It was very interesting to see how everyone was dealing with the issues. We also talked to some community leaders the second time out, to get a sense of what they were finding, what they were feeling, and how they were dealing with the management of the stress. As the quantitative work showed, there was a high level of stress that people were not really sure how to deal with.

These folks had never had to work the government system and pull in the aid, and it was offensive to them. And yet they were forced into doing so, and it was mind-boggling to them in terms of how to reach out and get the information they needed. I would hear story after story about, I give up, I don't know how to do it. I would encourage them to go back once again and work through the different agencies to try to see what could be done for them.

Then there were the people who fell through the cracks of help. In the farming situation they were primarily the people that rent their land. In a lot of cases farms are inherited and passed down through the different generations; I would be talking to people who perhaps were living on the land of their uncle or their father or their grandfather, but they didn't own it. They didn't own the farm and they didn't own the land, and yet their home was gone. Those were people who fell through the cracks.

Or you would hear stories about not being able to get unemployment assistance because of the amount of income they had made the previous year, and they reinvested that income into more assets for the farm so it showed a number that didn't really allow them to get much assistance. That's when you would start to hear the anger, the feeling of not knowing why and how to work the system.

But the overriding issue was the need to figure out how to manage the stress. When I talked to people in November, those I had talked to in August still were not back in their homes. They were still displaced. I am sure every one of us could empathize with living with your parents again, or with your aunt and uncle, or whoever, for that extended amount of time, with your children living somewhere else.

The other thing to be remembered is that it isn't over. Most everyone told me that it would take at least

five years to financially recover in their businesses, and that would be if there was no more flooding and they could get back in their fields. But with all of the gloom and doom that I saw, I also saw a lot of optimism. People felt that if they could get back in those fields this spring, they could get back on their feet, and they would do it again.

We just finished another study for the agricultural industry, and we added in some flood questions to see what was happening. We asked who was affected, and in our study about one-third were affected, all coming primarily from the Midwest. Then we asked, So what are you going to do different? Two things came back. One is, I'm not going to really change my practices. Nothing dramatic is going to change. And I'm going to pray even more that the rain is controlled.

I think that is an important factor to remember about the farming community and the recovery processes—how important their faith is in the healing process from a disaster like this. It's really quite different from many of the other publics that we survey. That came through clearly when people sat down across the table from me and talked about their problems and their concerns—the way they were dealing with it was by relying on their church and their faith. That was very interesting to me.

That gives you a bit more flavor of the kinds of things that we heard from people. I'm sure that Pam would be happy to answer any questions, and if you have any specific questions about the conditions out there from an emotional standpoint, perhaps I can add some more information.

**QUESTIONER:** [Do you envision continuing your work in this regard?]

**PAM HELMSING:** There are not plans right now, though there has been discussion of it. And certainly if we were faced with more flooding, we would go back out again, so we hope not. But, it is something that we would do, because it did seem to help the American Red Cross. They were very open to the information, and it was gratifying to see how quickly they responded and went back out with additional communications to let people know there was still assistance available. We also presented to the USDA. They responded very well in terms of the assessment of their services and what else they could do, agreeing to bring all their agencies together in a communications network, agreeing to extend deadlines and those kinds of things. We also presented to legislative aides from the areas affected, and that was helpful to get more information out. So enough parties were involved that I'm sure if it happened again we'd go back out to see what else was needed.

**QUESTIONER:** [Was your work well received by farmers?]

**PAM HELMSING:** Yes, it was. The reactions were very quick. The newsletter, for example, was extremely helpful to them, as was the toll-free telephone service that the government agencies put together in a hurry to link all the different agencies together. That is the one thing that the farmers continuously said—Give me information. Tell me how to take care of everything from cleaning the house to getting back into the fields and what I am going to find. But I would suggest that regarding the first round of information that was going out in August and September, people were in such a state of shock that they weren't absorbing it. It took a reinforcement of the information for several months for it to really start sinking in and before farmers could react to it.

**QUESTIONER:** When you looked at the different agencies and the people responding to whether they had contacted them, how did you differentiate between the ASCS, the SCS, and the USDA?

**PAM HELMSING:** We allowed the farmer to tell us who they had contacted, so of course there is overlap between the organizations but that is how they gave back to us.

**QUESTIONER:** So if they said USDA, they may have meant ASCS or SCS?

**PAM HELMSING:** Yes, so you really have to look at it in a cumulative sense.

**QUESTIONER:** So what we should probably do is stack those three columns [shown in a slide] on top of each other?

**PAM HELMSING:** You would have to go back and look at the data and make sure that they didn't mention all of them and take out any duplication to get a total cumulative number, but it is something that could easily be done. I think the interesting aspect is the largest percentage of people saying the ASCS; it is my premise that they went to that first, because that is who they are most comfortable working with, and they knew that's where they could go as a starting point.

The last issue of *Road to Recovery* includes the research that Susan and Market Directions did, along

with some of those statistics of the amount of damage. About half of the newsletter is information that we got through various mental health services on stress management, how to recognize stress. These are different numbers to call, and you might find some of that of interest. I would like to thank Dr. Obovarma from the Greater St. Louis Mental Health Association; she is the flood coordinator there. She was very helpful, along with Dr. Carol North, a psychologist at Washington University who provided a lot of information that we could get out.

**DAVID BAKER:** Thank you for sharing that information with us. Something we're hearing about a lot is the combination of the public/private partnerships, and this is a good example of how we really need to depend on one another.

This afternoon we are going to mix you up a little bit more and send people out into their state work groups so that they will have a chance to exchange information with people from a broad spectrum of issues within that state setting. One of the ways that we want to get some of the discussions going is through some case studies. So once you get into your groups, come up with a case, maybe one that has occurred in your own state, and discuss it from the perspectives of all the different agencies or organizations that are represented in your group. You will have the information that came out of the issues work groups so that you will be able to see what sorts of components cut across all the issues and come to impact on your own state area.

The state groups will meet twice, once this afternoon and again tomorrow; it will probably end up being about 45 minutes of working time. What we would like to come out of that is an actual action plan; there is a worksheet in the facilitators' packets that lists out what next steps you want to take in your own state, as well as some communication plans, both internal communication and communication with the public or the media. We want to leave here, not just with a lot of good ideas, but with some wheels under those ideas.

Someone told me one time that the difference between a vision and an idea is that a vision without action is just another good idea. We all have plenty of good ideas that never go any place, so we want to build that process in.

# Tuesday, April 12, 1994

**GAYLE OLSON:** What we are trying to do here—with mixing you up in the first place, going from issue groups into state groups, and now to have states report back before convening again to put together action plans—is basically a hybridization of ideas. Often ideas come up in one group that really fit well with another group, or a component of that idea makes another idea much stronger, but without the kind of interaction we're building in we don't have the opportunity to build those ideas together. That's what we are trying to accomplish with this report-back session. Illinois, let's hear from you.

**MEL BROMBERG:** Hi, I'm Mel Bromberg from Illinois. The problem in our group was that a flood victim didn't know when the house she had lived in was to be inspected. She had come to the inspection site three times and harassed inspection workers to do her house next. One of the Extension personnel who were on-site assisting the engineer hired by the town told the woman that he would personally do the inspection for a building permit at the end of the day. The woman abated her harassing of the building crew inspectors temporarily, till she had her decision. Could this have been handled or managed differently?

We came up with the following solutions to the management of this problem. We believe that the timing information for building and clean-up reconstruction would have been helpful to the woman. We believe we should have attended to her need to validate her concern over when the house was to be inspected and the implications for that.

We believe that if she had known of the streamline assessment of property forms, either through FEMA or something else, that perhaps some of her uncertainty about her condition and what was happening would have been alleviated. Referring her to a stress outreach program during the time of her frustration may have ended her harassing of the people on the job. And we believe also that if FEMA had given her an options list—what to do, how to handle her situation, what the next steps would be in the building process—she may have been less frustrated and decided not to take it out on the people on-site.

Also, the employees on-site, including the Extension people and the building inspectors, should have been debriefed to reduce their work stress level and enable them to be more friendly to her, less coercive if they responded in any coercive manner.

We also talked about the use of JTPA personnel for ancillary job assignments, because the level of technical expertise for this building inspection wasn't so great that it needed to be a full professional engineer. In some cases it was a matter of holding a tape measure and reading it. Then had we given the lady information about what her next steps and options were, we believe that that would have helped relieve her distress a bit more.

Then we went back and remapped the problem, as we were instructed to do, using the solutions we had come up with, and we had the woman concerned doing the following: Number one, she would have first talked to a JTPA worker or a local volunteer who would have listened to her problem. It would have been someone from the town so she would not have to be speaking to an outsider.

Number two, the JTPA worker would have given her accurate and realistic information about the written process for the building inspection. The worker would have listened to her and validated her concern for emotional and moral support. The worker would have been trained to give a time frame and trained in these other areas as well. That word *trained* is important, because we want our JTPA workers to know what they are into. The worker would have referred the woman to counseling options if she still was unhappy about her time frame for building inspection and the way the assessment was being managed.

Number three, we would have had a new streamlined assessment process going on, which of course decreases levels of frustration. We would work with FEMA or other agencies to get that going.

Number four, we would have a feedback loop about how we handled the situation, how it went, how the lady enjoyed our company at that point, and the service that was rendered.

That's our Illinois problem for today.

**GAYLE OLSON:** A question for the Illinois group and the other groups that went through this process. What we were trying to do was not necessarily come up with solutions for a specific hypothetical or real case, but to bring together some of the different players to talk about who had what resources, how they were being utilized, making plans for utilizing them more efficiently. In addition to the problems that you talked about, did that sort of discussion take place?

**MEL BROMBERG:** Pretty much, yes. We talked about agencies and structures.

**GAYLE OLSON:** Okay, that sounds good. Now let's hear from Steve from Iowa.

**STEVE REYNOLDS:** What we did was try to identify a number of issues based upon some of the morning discussions, to build on those and take off for areas that we needed to address. I think these really cut across a lot of state boundaries. One of the areas raised as a big issue was that there supposedly is money available. There are some timelines and a lot of limitations attached to the use of that money. And some of the timelines that are being imposed on the use of funds are very artificial. It is not very efficient, it is not easy to tap into, and it is not really meeting the needs of a lot of people. That is something that we need to take a look at—is there anything that we can do in terms of dealing with those timelines and making the use of the money more appropriate? A number of people here have mentioned resource guides. There is one from Minnesota; other people have mentioned that. We believe that we need to clearly identify whose taking a lead in developing resource information so we can avoid duplicating efforts and coordinate the information that we have.

We talked quite a bit about how we could go about doing that; Pierce Jones from Florida may want to elaborate. And in addition to just coordinating information from the Midwestern states, how could we take the information and the process that has already been established from Florida, from Los Angeles, from a variety of places around the country and outside the United States? We've got a visitor here from Moscow who might be able to provide us with some very useful information. We need to look at a method for coordination and for making this something that can be very readily useable.

Related to that, we wanted to try to identify some kind of an expert base or an advisory board that could provide information on specific topics, or some peer review on specific topics. In the hotline we have a resource that we may not have been using to its fullest extent. I didn't realize myself that it wasn't limited just to mental health information. We may be able to tap into analyzing that data to find out about things other than just mental health issues.

Finally, in light of the fact that we were missing some of the people from the governor's task force, and some of the other players, we need to go back and update them and get them involved in this process. We need to identify all the players that need to be included in this.

**GAYLE OLSON:** Alphabetically next we have Missouri.

**DAVID BAKER:** We had the ultimate case study solved within 15 minutes. It probably will regenerate itself in the next disaster, but we solved it for this time.

McDonnell Douglas, a major industry in the floodplain of St. Charles, had a major problem resulting from the fact that one of their facilities became an island, which became a perfect spot for the accumulation of all kinds of varmints—snakes, foxes, frogs, rodents. And in addition to that we had a transformer under water, electrical lines carrying high voltage. We didn't know how to kick them out and how could we handle all of those questions rather quickly. What we found out was that we couldn't find anybody that had answers. We walked through the scenario of how we would have gotten those answers which identified resources in the state we didn't realize were there.

State Emergency Management could have played a role. University Extension could have put some people in there. We probably could have gotten the Guard, the helicopter, and somebody from the Conservation Department to make some decisions. But the chain broke down, and it was followed appropriately to the local county emergency EOC center, which didn't have an answer and referred it back. The local health department didn't pass it on. So we can't get on the state because the system didn't work. Until today, I don't think Mike even knew university Extension had those kind of resources available. So we've broken that chain of command and worked on how we bridge those gaps in the future.

One major issue is the need for consistent information from agency to organization within the state so that we get consistent recommendations out. And we are looking right now at the State Emergency Management office providing the lead on how we get that done, at the need to complete the circle of information, moving information from central spot down to the place that it is going to be used. This basically goes back to the problem McDonnell Douglas had—getting key expertise when it was needed.

The need I think most of us are floundering with right now in Missouri is documenting what we learned, so we don't have to learn those lessons again. It would have been fantastic if we could have set up a database to inventory those questions but it probably wasn't best done by those of us that were doing first-line response. It needed to be somebody from the outside that could gather the questions and the responses, so that we didn't have to go through this again. We also talked about using the new technology. But the question came, How do I access it? How do I get through

it? Well, through the local Extension center is one route. But, you know, we've got to work through that somehow both in the state and at the federal level.

There's also a need to inventory and provide information as to the specific local resources that are available. Missouri's directory has three pages of toll-free numbers for all the various departments that I know that Mike and McDonnell Douglas could have used when we were facing their issues. They could have gotten on the phone and had their questions answered. The flip side of that coin is that we need to inventory expertise within state and local areas.

**GAYLE OLSON:** How about the group that had multiple states in it?

**ROGER WILLIAMS:** To be perfectly frank, we didn't do a case study, but Larry and I made one up, just a couple of minutes ago, and we will start with that one.

It concerns a farmer who needs all kinds of services and has access to, or at least has eligibility, for all these various programs—FEMA programs, mental health programs—but he just doesn't know what programs are out there or how to access them. He doesn't know how to fill out the forms. He doesn't know any of that. So we talked a little bit about seeing the federal government organize these things so that someone can fill out a single form that lists every applicable program and he just checks it off. I know I can get this, I can get that, that, that, that. Then he hands it in and he gets all the services. But we decided that the government wasn't quite up to that yet. So the way to handle it is to do that stuff at the state level.

In Nebraska Cooperative Extension has a program called the mentor program that tries to do that. It is not perfect, but it is a start. The mentor, sort of an expert in all the programs, meets with the farmer and can do financial assistance, can do mediation, can do mental health. We've done some training on mental health services available, and the mentor becomes a sort of one-stop advisor for people who need these services. So that is our case study. That's not much but we just started on it.

What we did instead in our group was look at issues that we thought were really important. First was mental health. One of the things we felt we need in mental health is a surveillance, the collection of longitudinal data on how you connect flooding or disasters and their economic impact to mental health and substance abuse services. The federal government is collecting data on clients who are seen in the supportive mental health and substance abuse systems. Very extensive forms are filled out on all these people, all the demographics and more. But these are not the kind of people you see in flood response situations, so we need to extend that kind of data collection to people who need special responses from flood and disaster programs.

We don't know who exactly will pay for that kind of data collecting system, but it might not cost a lot. We might be able to do social services research for relatively small amounts of money and find out what happens to people who are in floods. The problem with this research is that it would have to be longitudinal, three or four years, because some of the crop loss impact, for instance, isn't really felt immediately. There are carryover financial situations where a farmer is not going to be in trouble for the first year because he's got carryover from a crop he has already sold. It might be even the third year before anything really happens from the flood, so this kind of data collection would have to encompass some long-term kind of experiment.

Regarding service delivery of mental health services, we thought we needed to look at nontraditional settings, such as outreach through industry employers.

Child care and respite care settings for mental health services we thought are important and are missed frequently. Religious and volunteer organizations are other important resources for delivering mental health services.

Then we looked at emergency services. You know, I am the squeaky wheel on the FEMA thing. I think Nebraska was burned, and we need to talk about that. There was some delay in FEMA grants, and there is a problem in that FEMA doesn't really understand mental health services and other services that they are kind of required to provide. They are set up as disaster response and they don't become experts in day-to-day human services, so they have to rely on technical assistance from the day-to-day experts. And sometimes the day-to-day experts don't give them really good technical assistance, we don't think, in Nebraska.

One of the problems was that service providers couldn't see the longitudinal impact of the flood. We had a rough time convincing the people who were providing the mental health technical assistance that this wasn't just a continuation of the economic crisis, the Farm Crisis of the 1980s, and that we weren't simply using this to provide more farm crisis economic assistance. So we have to somehow educate FEMA and the people who are advising FEMA in whatever we do. We have to educate them to understand what the impact is and how it is going to be experienced or manifested, because some of them just don't understand it.

And some of us are losing a lot of support because they don't understand the system. For instance, they don't understand the farm cycle. The mental health guy simply didn't understand that these impacts wouldn't be felt because of the way the financial cycle is arranged or organized in rural America. The flood is now, but the consequences of the flood, in terms of economics, aren't going to happen until next year or maybe a couple of years down the road. And they just didn't follow that; they were looking for what is happening right now. We didn't need immediate services, because the farmers weren't in trouble immediately. They are going to be in trouble now, and maybe next year, as a direct result of that flood.

Some of our people thought there was a bias in public damage versus individual consequences in FEMA support. I'm not very familiar with that aspect of it, but they are saying that if you have large public consequences, those get attention and funding, but if you have an individual who is hurt or some kind of stress because of it, that doesn't seem to get the same kind of attention and funding.

People at state levels, of course, need to collaborate, and we talked about having some kind of standing interstate planning body. We could do collaboration, Midwest flood planning, with people from each state who are involved in providing the services that respond to disasters.

Another area we found to be a problem was insensitivity to cultural values—farm values—and resistance to assistance of farm families and farmers.

We need to learn to deal better with low-income individuals and communities. FEMA should fund a state-level, long-term recovery disaster coordinator. In other words, it should be a FEMA responsibility to put a long-term disaster coordinator person at the state level to provide planning and to be ready. Current disaster response organization is held together on an almost part-time basis in most states. And then we try to gear up and do full-time stuff all at once.

Hazardous waste was another problem, including buyout situations. The buyout didn't include disposition of buried tanks. So they would buy it out but you would have to take the tank out, and that's not a good deal. We have to be able to arrange what happens with buried storage tanks in buyout situations. Many states are working on increasing water safety standards as a direct result of the flood, such as where you put septic tanks in relation to wells.

Infectious disease was an important issue. Somebody mentioned that we had anthrax coming up from carcasses buried sixty years ago. The anthrax apparently is still vital. That scares the hell out of me.

The assessment and impact of fungus and molds in homes was mentioned by people who think it should be part of FEMA's home rehabilitation program.

Also suggested was that states should regulate land use for floodplains just like it is controlled around communities.

**GAYLE OLSON:** We'll hear from one more group, the group from the federal agencies.

**BRAD REIN:** We had a very good working group. I think I might point out—I'm not sure how many of you noticed this—that this is one meeting I've been to where the feds have stayed around. They have stayed to listen to your concerns and what problems have developed. I think these people are here to share information, to share ideas, to look at things open-mindedly in terms of how we might work together better. There's been a real increase in awareness that all the different federal agencies represented here have a significant role to play in responding to disaster situations, and no one federal agency can provide the type of support that is needed at the state and community level. That is definitely going to be a shared responsibility.

One of the things we definitely recognize is that the federal government is obviously going through a reinvention, a lot of changing and sizing. There's going to be a loss of institutional memory within the federal government. We are concerned with the types of things we are hearing. We are listening for ways that we can do our jobs better.

Clearly we need to communicate better in how we provide resources and how we provide information, how we provide the services that our agencies are responsible for. We should support the use of technology to communicate more effectively. For example, perhaps we should develop an electronic clearinghouse that would provide information about what each agency is responsible for and the key contacts in each agency—not just the official contacts but people we have identified with an interest in trying to provide you with valuable information.

A lot of things have been brought forward at this meeting that I just wasn't aware of, in terms of different types of recommendations that have been made. We definitely want to look at how we might handle those situations better, but we recognize that everyone is going to want to look for the most sound scientific basis for those recommendations. Only by communicating more closely and becoming more aware of each organization's structure and the basis on which decisions are made can we begin to solve some of those discrepancies and tax recommenda-

tions that are coming down to the community and state levels.

We recognize that a great deal of team building has taken place in the states and the counties that have been affected by different types of disasters—the flood recently, and others that have taken place in other states. But we also recognize that there are likely to be disasters in locations that have not had disasters for some time. And as a federal partner we can be supportive in encouraging them to do some of what you have done in team building, developing infrastructure, and planning ahead for preparation, response, and long-term recovery. We've got a great deal to learn from the way in which you do that on a practical basis.

We want to encourage you to keep the pressure on us to make these things happen. I think that is going to be the driving force. We do want to do better, but the real driving force for making that happen will be your need to see that we communicate better on a federal level. I also want to encourage you to keep in contact with your counterparts so we keep moving ahead on this.

**GAYLE OLSON:** I know that a lot of times people are not comfortable going through a discussion kind of a process, so I commend all of you for sticking with it. I think from hearing the report-backs that we are making progress.

I encourage you to try to do some regenerating tonight so you can come back with more of that energy again tomorrow morning so that we can tie up some of these loose ends and all go back home with a clear message of what we want to transmit to the counterparts that we work with daily.

Thank you all for your active and honest participation in this. It has made all the difference in the world. And I think that truly can make all the difference in the world.

*MORNING*

# Wednesday, April 13, 1994

**TED SCHARF:** For those of you who feel like you are just beginning to learn E-mail, just practice. That's the message I would like to pass along to everyone today. It's your participation, your practice with E-mail that is going to make this happen, because basically what we want to do is to take this meeting and put it on the road. You are all going home to your various locations, but we want you to continue to communicate, to cross-connect, to interact on a daily basis.

We have a list of great presenters who are going to present some resources. A number of really intriguing and exciting developments are taking place, and we want to give you a window on a few of them.

I'd like first to introduce Alice Adams. Alice will be co-moderating our electronic network with Risa Lumley, who unfortunately was not able to be here today. Risa is with CADIREP at the University of Iowa. Alice is working with a number of other distinguished people who also could not be here. Among them is Diane Kovach, a reference librarian at Kent State University and a true Internet wizard. I've had the opportunity to work with Diane, and I can tell you she is a tremendously experienced librarian in this area. Other network participants are Joy Zimmerman, who works with Sarah Towner and Terry Brown at the National Agricultural Library, which is one of the three national libraries in the nation.

So there are a lot of people who couldn't be present at this meeting, but whom you will meet in the electronic conference. So let me turn this over to Alice Adams.

**ALICE ADAMS:** From the very beginnings of planning this conference, part of the concept was to include an ongoing electronic discussion or conference to follow up on the progress that has been made here, the communication channels that have been established and the interaction that you have begun. The electronic network is a very important tool, but it is only one part of the follow-up that we want all of you to participate in. We want you to continue to talk over the telephone, to talk in person, to meet, but this is a very useful tool in terms of transferring information, sharing ideas, asking questions to the group and getting answers back.

The content and the responsibility for success of this electronic conference belong to all of us here. We need to actively participate, and we need to actively recruit other subscribers. The more information that we have coming in, the more useful it is going to be to all of us. We encourage you to pass the word around to get more people involved.

For those of you who are not really familiar with the list serve–type electronic conference, as I was not until a very short time ago, it is an electronic distribution system that works through your E-mail. You send a message to a central point. In our particular case, it is a moderated list serve, and I will be one of the co-moderators. The purpose of the moderators is to protect you, so that we don't have unsolicited material coming in of a commercial nature or other inappropriate nature. We are not there to edit anything that you send out; we just want to be sure that mistakes don't come in. Sometimes people will accidentally send something to the wrong list. We clear out all that and then redistribute it to all the subscribers.

We will be arranging our list serve by topics. Did everyone here fill out one of the sign-up sheets for the interest groups? Those will help us determine the original list of topics included on the list serve. The categories will let you direct and target the information that you want. Some people will be very interested in certain topics and not at all in others. Some people will want to see everything that comes over the list serve. By categorizing things you can, to an extent, customize the information that is coming in to you. We want your continuing input so this can be responsive to your needs and your interests. As you see all of this evolving, please continue to give us input through the moderators.

In addition to exchanging messages with other people, the electronic network will be an information resource. We will begin to build an archive, not only of the information that we exchange but also files and journal articles and newspaper articles that we see around the country that we think will be relevant and of interest to the subscribers. Those won't be automatically downloaded to your files—we don't want to clog up your E-mail. But you will be able to retrieve and download that information as you wish.

So you can see what a great information resource this will be.

More co-moderators will be added as we go along, and we will keep you updated on that. I am not an expert on this, but I would be happy to try to answer your questions, and I certainly can direct you to the appropriate person. And I know the other two

moderators will also be a great help if you have any questions. I encourage everyone, as soon as you come on-line with your subscription, to become active in responding to people, to put questions out on the network, to share information, whether it is your success stories, questions, information you have, information that comes to you from another source. Our participation, and our recruitment of colleagues, will make this a success.

**TED SCHARF:** Thank you very much, Alice. Up next we have Bill McFarland, who is the director of Extension technology and computer services at the University of Missouri-Columbia. It was only in preparing for this conference that I learned about the tremendous Extension computer network, and I think this is an exciting piece of information.

**BILL MCFARLAND:** Thank you, Ted. I am here to describe briefly the electronic communications facilities that we provide for the university's Extension personnel. As director of Extension technology I design, implement, develop, make aware, provide, focus, and encourage the use of appropriate information and technology.

We have provided, first of all, about 1,988 electronic mailboxes, for all county offices—and, as it turns out, for anybody who has a telephone line through a commercial package called CC Mail. Every computer owner who wants to have an electronic mailbox gets a piece of software that stands alone on that PC. Mail is created on the PC by the person who is interested. Files may be attached to messages, such as Lotus files, WordPerfect files, or even forms, and messages then are sent back to Columbia over a telephone line, using the line only for the length of time it takes to actually transfer the files. In other words, this is not an on-line electronic mail system. When a connection is made from a remote PC, any messages in the host post office for that remote PC are downloaded at that time. Otherwise they just sit there forever. So we were concerned when we first started out that some people might never call in to get messages, and of course that happened for a while in the beginning.

Those of you who haven't used electronic mail much will discover the cultural change that it creates in your life, and maybe in your whole organization. It has created a cultural change in university Extension. You are expected to send things by electronic mail now. You are expected to pick up your electronic mail. It is not an accident or a mistake or a once-in-a-lifetime occurrence. It is an expectation. Long-distance telephone charges dropped by more than 25% in the first year. Postage has dropped immensely. Telephone tag doesn't occur too much anymore. Probably 90% of the time that I am at my computer, I have it on the electronic mail screen.

List serves can really clog up your mail system. If you start subscribing to a lot of them, and they all put out twenty-five or thirty messages a day, you are not going to be able to stand that. It's like driving a car—you want to learn how to put on the brakes before you get the thing rolling.

Electronic information service is what we are really talking about here, as well as communications. Conferencing, in effect, can occur over mail systems if you want to make it happen in that manner, although that is not exactly what is being proposed by the Flood-L type of operation.

In closing, I just want to give you some idea of how the culture has changed because of electronic mail in Extension. I keep records of the telephone calls to and from the county offices. In Missouri we have 114 counties, about 256 field faculty, about 150 secretaries or administrative assistants, and about 125 or 150 paraprofessionals in the field. And then we have some 100 to 200 people on campuses. We have 1,081 computers in this system, although not all of those have their own electronic mailboxes. In January and February, we logged 12,000 phone calls within this system. The average call was one minute and twenty-seven seconds. We averaged about 2,300 mail messages a *day* through the system, and it is all local area PC–based. It doesn't really cost much to put in place. Of course we have an 800 watts line to accommodate those kinds of charges.

It will change your life if you get greatly involved in electronic mail. And if you really get involved in information transfer and delivery and fast access, you will want to go a step beyond electronic mail and get directly connected to the Internet so you can interactively look at some of these information sources.

**TED SCHARF:** Thank you very much, Bill. Next we'll hear from Floyd Davenport from the Illinois Cooperative Extension Service at the University of Illinois at Urbana-Champaign. He will be speaking on the electronic distribution of flood-related materials in Illinois.

**FLOYD DAVENPORT:** Good morning. I manage a wide area network that supports the Illinois Cooperative Extension Service and the College of Agriculture at the University of Illinois. Our system also provides a component for the public to connect to the system and view our information. The services we provide are electronic mail, Internet access—specifically

Internet mail—and distribution of information via a couple of tools called Gopher and WAIS.

We have an almanac server, which is pretty much the same as the list serve you have heard about this morning. Our almanac service is new. We have implemented some discussion groups and some distribution lists on the almanac server, but it is not fully implemented at this time. We also have a number of miscellaneous databases that we use internally.

One of the ways the Illinois Cooperative Extension Service responded to the Flood-Last summer was to create an information server and put up flood-related materials. The tools we used were Gopher and WAIS. Gopher allows us to organize and distribute information over the Internet. I am sure many of you have heard of it. It is a menu-driven tool that allows you to basically point and select the information you want to view and download. WAIS, which stands for Wide Area Information Server, provides a search engine so you can go into a document database and use a keyword search to find specific topics and specific information.

When we first put up the information on IDEA, this is the way we organized it. Each one of those bullets [on a projected slide]—Agriculture, Community Development, Consumer Economics, and so forth—represents a folder of flood information. I have heard a lot of discussion here about information being accurate and up-to-date. When you put up an information server, you start getting information overload from a number of sources. We went through that, and one of the next steps was somebody saying, Where is all this information coming from, and who is validating it? So one of the phases we went through at the Extension service in Illinois after uploading information was for our state specialist to actually review the information. We actually ended up pulling some of the information and providing updates.

We also found out that after about six months, we had a few hundred documents on the database, and people were having problems getting into the system and locating anything that was new. So we divided this information into categories and put it into electronic folders. The older files went into Archive Flood Information. A second folder is Flood Contacts. The more timely information we put in a third folder, Flood Fact Sheets, so users could come into the system and see what has been uploaded without trying to traverse a menu of hundreds of documents to see if there is anything new.

Since we put our system up in June of last summer, it has been accessed more than 12,000 times. It is on the Internet, so we have been getting access from places like Australia, which evidently has a lot of flooding. Of the 12,000 times the system was accessed, about 7,000 of those accesses were done in about a two-month period when the flood was actually occurring. So timeliness is important.

Another of the comments I have heard since I have been here is along the lines of communication. One of the tools that we are looking at to solve this communication problem between multiple organizations will be the Flood-L, which is, I think, a good starting point. It at least gets a lot of organizations communicating

One of the problems we ran into in Illinois, and one of the reasons for Flood-L, was trying to find out who we needed to talk to in different organizations and who could handle what problems. So, one of our specialists, Holly Hunts, put together a mail-merge file in WordPerfect that was organized so that you could go in and find out, based on keyword or on location within Illinois by county, what point of contact you might be able to get ahold of or make use of. We took that mail-merge file and broke it down into our information server on Gopher. If you go into Flood Contacts on the menu, you can go in by county or by keyword and you can pull up a document such as counseling and find out what organizations, possibly at the federal level or the state level, you might be able to contact. I'm not sure what the use of that component has been because I got it into the system late, but I think it was a great idea. I think it is still fairly accurate, and I would encourage you to go in and take a look at it.

Another electronic folder is Public Access. Things are changing all over the world, and one of the changes we have had in Illinois Extension is in the fact that we have always been a closed system. Well, that's changing—the world is getting smaller, the Internet is getting bigger. We wanted to allow the general public to come in and have access to a lot of this information, so we created a component where you can come into our system. We also have about fifteen dial-up lines that let you dial into the system. We support both low- and high-speed modems.

I encourage you to connect, take a look, and if you have comments I will be subscribing to the Flood-L, so send them out and we'll see what happens.

**TED SCHARF:** Thank you very much, Floyd. Next up, and not on your agenda, is Dr. Gene Freund from the Division of Surveillance, Hazard Evaluation, and Field Studies in NIOSH. I asked Gene to substitute for representatives from the Centers for Disease Control's WONDER/PC. Gene is experienced in public health service, information transfer, and surveillance.

**GENE FREUND:** How many people here are already on E-mail of some sort? A very large group.

How many people are WONDER/PC users? I bet there is one here. Two, okay, three. So the audience overall is pretty sophisticated in terms of electronic mail. For those few of you who aren't, as Ted said, it is just a matter of learning how to use it. And compared with other new things, like learning to drive a car or ride a bicycle, you won't get hurt if you make a mistake, and neither will anybody else. I think that concern about getting hurt is what gives us fear about learning new things.

WONDER/PC is a way that people who identify themselves as public health professionals can get a CDC E-mail address and get access to some of the data that the Centers for Disease Control have. It is a fairly easy system to use. [For more information, contact CDC WONDER Customer Support, 1600 Clifton Rd NE, Mailstop F-51, Atlanta, GA 30333; phone 404-332-4569; fax 404-488-7593.]

You can find things on WONDER/PC like the latest morbidity and mortality weekly reports, all the surveillance summaries, vital statistics. In one program you can get selected statistical data by county, and you can have E-mail via your CDC WONDER/PC address which will access the Internet. For those of you who already have Internet addresses, there are ways that you can make sure you only have one E-mail box and not have to check several spots for mail. And it is free, which is an important thing. There are a lot of commercial services for E-mail and Internet, but they tend to get expensive.

I would encourage those of you who have use for WONDER/PC to subscribe to it. I think it is a valuable system, and I like to do a little cheerleading for it.

**TED SCHARF:** Thanks, Gene. Colleen Hennessy from the Federal Office of Rural Health Policy is substituting for Joy Zimmerman at the National Agricultural Library. Colleen will be talking about the Rural Information Center Health Service Center, which is sponsored out of her office.

**COLLEEN HENNESSY:** Actually it is co-funded; the USDA also funds it. We have been working on this partnership for several years, and we are getting pretty good at working together. It is really nice to see this come together.

The Rural Information Center is located within the National Agricultural Library in Beltsville, Maryland. Inside of the Rural Information Center we have a special information center for health services; that is what the acronym *RICHS* stands for. I want to tell you about two specific parts of RICHS.

One is the information system, services that you can access through a toll-free number. It is just that simple. Joy Zimmerman is one of the experts who would pick up the phone on the other end of that line, and you would simply ask her either a specific question or that a specific search be done. You can ask to get on ALF, you can be connected to a number of interlibrary offices loans through the national library. All you need is the toll-free number, and there are six people working there.

You can also get a specific search done for you. Say you were doing some research in a rural area, and you needed something concerning disaster response, or health reform in rural areas, or even more specific, like a population—Native Americans, the Amish, the rural elderly, rural adolescents, health services for rural adolescents. All of these are specific searches. The staff will tell you what they have and ask how far back you want to go. You can go back as far as 20 years for your research. For most of us, though, three years is quite sufficient.

We also have a special electronic bulletin board called ALF. You can access it with a simple computer modem and some communications software. You can also get through by the Internet.

It's not quite as easy as getting the list serve right to your door, but it is convenient enough to make it worth your effort, because you can get information concerning what comes out of the Federal Register every time they announce sources of funding or new grant opportunities for rural areas. You can pick up that latest document right through the Internet, right through ALF. And you don't have to leaf through those magnificent and fun-to-read documents every day to find out if there is something there that is pertinent for you.

You can also get the latest on legislative activity that has to do with rural areas. You can pick up the same types of searches that you could get through RICHS itself, or you can enter into a dialogue between other people, other rural researchers, other agricultural libraries, other agricultural sources. And you can find out what the latest conferences are going to be, what conferences you would like to get involved in; this one, for example, was advertised through RICHS and through ALF.

**TED SCHARF:** Thank you very much, Colleen. Our next speaker is Pierce Jones. He is in the Department of Agricultural Engineering at the University of Florida and he has some really exciting material to present today. He will be talking about development and distribution of Cooperative Extension Service safety and health information in Florida on CD-ROM.

**PIERCE JONES:** What I would like to do is quickly give you a demonstration of the Florida Cooperative

Extension Service information retrieval system, which is referred to as FAIRS—the Florida Agricultural Information Retrieval System. This system is CD-ROM–based. It started out being on a network, but through the 1980s we found that our counties went to PCs primarily, and baud rates and other limitations stood in the path at that time, so we evolved a CD-ROM–based system. This system was not developed based on administrators making decisions but by an ad hoc group working very closely with Extension agents. As several speakers have mentioned, during this season of floods that you had here in the Midwest, one of the resources that worked particularly well was the county Cooperative Extension Service system.

This product that I am displaying is very much targeted at county Extension agents. It is intended to be a toolchest of resources to be used for county-level programming. The major materials that we include are fact sheets. So, for instance, let's look at an item like Departmental Programs. I realize this may be difficult for you to read, but I want to show you [in a computer demonstration] how simple it is to navigate. I'm going to move the mouse down to Home Economics and click on that. The reason I am going to Home Economics is because of Food Safety and Handling; in our response to Hurricane Andrew, under Home Economics we had a section titled Hurricane Preparedness. Many of these materials were brought up, as Floyd mentioned, on the Illinois system and made available throughout the Midwest.

Under Home Economics we have Handling Insurance, Drinking Water, Meal Preparation, Cleaning Household Utensils and Metals, and so forth. There are quite a number of titles; one I want to show you in particular has to do with drinking water. I've heard questions about chlorine, so I am going down into chemical treatment. I am in the document now, and here are the recommendations for using chlorine bleach, Clorox or Purex, or iodine to purify water in your home. So this material is available from the CD-ROM, and it is available as a print-on-demand fact sheet, a fairly high-quality document that prints to a laser printer. There is at least one of these CD-ROM systems in each of our county Extension offices in Florida, which is sixty-seven sites.

We have evolved now to more than 500 of these CD-ROM systems throughout our Cooperative Extension Service in Florida. Purchases of these pieces of equipment by master gardener clubs were donated to Cooperative Extension, based on county commissioners' seeing it and liking it. Some counties have as many as eleven or twelve of these; other small rural counties may have only one. But basically all of the documents in Florida Cooperative Extension that have been prepared for CD-ROM are available, print-on-demand, in those county offices.

Let me give you another example. I just showed you a way to navigate using a menu. Another way to navigate is under Major Programs. One of the major programs that we have as a result of NIOSH grants through the AHPS [Agricultural Health Promotion Systems] program is a large collection of agricultural safety documents. I would like to show you our search feature.

This is full-tech search, as opposed to keyword. I have typed in the words *lifting* and *Becker*. Now it happens that our safety specialist is named Bill Becker, so I am going to key on his name as the author of the document. I am looking for one of his documents that has to do with lifting, pulling, pushing—I can't remember the name of the document, but I can do a search on those two words and hopefully come up with a couple of titles. Now, often when you use keyword searches you get a lot more titles than you want. You can see how many I got. These are locations within this collection, the safety collection, where the word *lifting* and the name *Becker* occur. Now it is not surprising that Becker would have his name occur frequently in the Safety section, but the very first document is Proper Lifting to Prevent Strains, and the number on the left, 43, indicates how many times those words occur in that document. So I click on that title and now I am in the document: Proper Lifting, Pushing and Pulling to Prevent Strains.

If I were to want more information after having read this, I can click on the name Becker and I can use a "hyperlink" to get information on Bill Becker. And there is his phone number, his fax, his user name, his address. So the information to contact the specialist for more detailed information is right there at your fingertips, as you look at the material. If you wanted to have this printed copy for a program that you as a county Extension agent were putting on, you would go to the bottom of this document and click on the print command. If you wanted just a piece of this long document, to customize the information for your local situation, the WordPerfect files are all available. Just pull them up, edit them, print them off, and there is your newsletter, your newspaper article, whatever you want. The system is intended to be used by Extension workers, primarily at the county level.

One other thing I would like to show you is an example of an image. We include color images on the CD-ROM. Under the listing of Beneficial Insects, Dragonfly, I can look at a photograph of the dragonfly. We have stored about 3,000 of these high-resolution color images on the system. Unfortunately, most of those

images are related to horticulture and topics of that type and not safety. Safety publications give us good line art, but they don't give us many good color images. So that is one thing we are soliciting.

As a follow-up to the safety database that we had on this disk, Florida is working on a national agriculture safety CD-ROM. We are going to be releasing the first version in October. We currently have 750 documents prepared for this database, and by the end of the summer we expect to have about 1,200 titles that will be presented under this style of software. If you have any materials that you would like us to include in this database, available print-on-demand—English or Spanish, French, Haitian, Creole—we will put it on in any form you want to send to us. We will integrate it into this collection and then make that available, probably in October of this year for the first one, and hopefully a second one to follow a year later. That would be a more refined set and go through some kind of a purity process.

**TED SCHARF:** Thank you very much, Pierce. Our next speaker is Dr. Rick Niemeier, the director of the Division of Standards Development and Technology Transfer at NIOSH. He has also recently been named acting director of the Division of Training and Manpower Development. Dr. Niemeier will speak on NIOSH future directions.

**RICK NIEMEIER:** Thanks, Doug. I want to remind you that NIOSH has a broader mission than just agricultural. We have been in this business for about twenty-five years now, and we are learning with the rest of you.

As Gene Freund described earlier, we have a very heavy commitment in electronic communications network. Every NIOSH employee is on E-mail; that is about 900 people. I am inundated daily with E-mail messages, but I don't do a lot of telephone tags, and it saves me a lot of time, especially getting messages out to multiple people that need to know.

We also have on E-mail, or in our CDC system, travel vouchers, personal actions, future planning documents. The system is so large, in NIOSH only, that we have six or seven local area networks that are all interlinked. Several years ago we also got into the communication age by using Endvision videotelephone conferencing.

We are now doing Endvision calls between Morgantown, which is one of our research facilities, two locations in Cincinnati, Atlanta, and also Washington, D.C. Recently we have been doing a lot of videoconferencing with OSHA and with the Mine Safety Health Administration. We have a monthly meeting called the one-committee with OSHA, NIOSH, EPA, and the Mine Safety Health Administration. Sometimes we do the meeting on Endvision to avoid the travel issues that we are always suffering from. In addition, some of the division directors and the director of NIOSH are starting to use cellular phones so we can keep in direct contact all the time.

We have had a NIOSH toll-free number for about six years. That number received about 2,500 calls the first year. We originally made it a 24-hour-a-day service, 7 days a week, but we found out by monitoring calls that most were made during business hours, so now the service is limited to 9:00 a.m. to 4:00 p.m.

Calls to the 800 number have been increasing by about sixty or seventy percent per year; last year we had 45,000 calls. Five people, essentially, answer those phone calls, which was starting to eat up our resources, so we went to an electronic router system: You know, press 1 if you want this, press 2 if you want this. Some people don't like them, but it has been very successful for us. Our system links the 800 number to our publications office, from which we send out about 250,000 publications a year. You can leave your name, address, and phone number, or you can fax information in to our publications office.

You can get information packages by going through a list on the router system. You can actually get automatic faxes through the router system on selected topics; this is made possible through the CDC system. The first time it was up, I tested it in an office down the hall from mine. I selected a topic, gave it my fax number, and by the time I got back to my office two or three minutes later, it was there. There are a lot of topics we can be putting up on that fax system for immediate printed information. We have also used that system to route calls, for instance, for health hazard evaluations, when workers or industries or states call in for assistance. Those calls can be automatically routed to our health hazard evaluation. We have started a clinic referral service as well within the last six months or so. We do have humans on one end of the line to answer technical questions that don't come up routinely and we don't have information packets for. Then we do searches of the literature using our own databases, using the National Library of Medicine system, using lots of other electronic databases that are available.

After our deputy director, Dick Lemon, went on CNN to talk about indoor air quality—I think the sound bite was about ten seconds—we received 9,000 calls on our toll-free number. It completely inundated our health hazard evaluation program.

We have recently received funds from Congress to establish an archive system, a records manage-

ment system within the institute. NIOSH is twenty-five years old and we are losing our memory rapidly. So we thought it would be very important to make sure that we have accurate records of what we have done in the past. We currently have someone soliciting information from all the seven divisions. I think that archive will eventually be available through an Internet connection. We are trying to make it possible for it to serve everybody's needs, at least within the institute. And hopefully it will grow into a more public database that people can access for data, reports, and so on.

In connection with what Pierce [Jones] was talking about before with the Florida system and that NIOSH had funded this for a national system, we are producing at least one video to help train on the use of the agricultural CD-ROM. That will hopefully be sent out to public television stations.

We are currently setting up a bulletin board within NIOSH, and we are on Internet, as you have heard from Dr. Freund. We hope that in the beginning we will be distributing publications through that Internet connection—videos that might be available, training courses, our alerts, our Farm Safe 2000, other information. In addition, we are working with OSHA. Last week I attended a meeting with the OSHA Training Institute, and we are beginning to talk about long distance learning, satellite uplinks and downlinks. Another thing that we have done is to negotiate with OSHA. In the very near future we are going to have an optical line set up with the Office of Technical Support in Washington, D.C. They are optically scanning all of their docket office materials into large disks that will be available on a jukebox-type arrangement, and this can be read directly off the system.

These are some of the things that we are working on. As I said, we have a somewhat broader mission than just agriculture, but I thought that these things may be important to help stimulate some of your thoughts and where you can go with this technology transfer.

**TED SCHARF:** Our final speaker this morning is, once again, Alice Adams, the Lister Hill Health Policy Fellow at the University of Alabama at Birmingham and one of our wonderful co-moderators for the list working out of the federal Office of Rural Health Policy.

**ALICE ADAMS:** Just a couple of points I want to make. I was encouraged to see that so many of you are already using E-mail, which makes using the Flood-L an absolute cinch. All you are doing is sending E-mail messages out and getting them back. It is going to be a very useful tool to carry forward the momentum that we have all gained here.

The point I want to leave you with is that your participation is critical and the key to the success of Flood-L. That participation comes in two forms. One, in content we want your information, your ideas, your questions, your answers to the questions that colleagues pose, and your success stories. A lot of what I have heard in the last several days here has been success stories that others will take home and try in their areas. Flood-L is another way of sharing that information and getting it around.

The second way that your participation will be critical is in helping us to build a bigger subscriber base. The more subscribers we have, the more information we have coming in, the better we can disseminate the information back out to the people who need it.

**TED SCHARF:** Thank you very much, Alice. There is a tremendous potential for all of us participating in this type of network. For those pieces of information that won't be available directly on line, we will have pointers. So, in terms of Pierce's [Jones] system in Florida, we can put up an index and say this is the kind of material that's available and here is how to get access to it. We don't want to bombard you, but we do want to make available information as easily and quickly as possible to the people who need it.

I think the potential is exciting and almost unimaginable. You may have heard that much of the planning for this conference was done by the Flood MG list running on almanac out of Bill McFarland's shop at University of Missouri-Columbia. That's how we were able to get this together. There was a lot of telephone talking, too, but we couldn't have done it without the easy rapid exchange that resulted from Bill's efforts at Columbia.

Let me conclude by saying I think this has been a wonderful panel of presenters. I thank each and every one of you. Coming up next we have two very exciting presenters, here to describe some efforts at putting it together, examples of what works in disaster recovery for individuals and communities.

Janet Ivory is an administrator at the New York Center for Agricultural Medicine and Health in Cooperstown, New York. She grew up in the Detroit area. She attended Eastern Michigan University, where she obtained a bachelor's degree. Twelve years ago Janet and her husband began operating a dairy farm. They were forced out of farming by economic factors; they dissolved the farm business last fall. This June Janet expects to be awarded a master's in public administration from the Sage College in Troy, New York.

Janet will describe the Farm Partners Project in New York. She plans to do a brief overview and then try to involve you with questions and comments to elaborate on details of the project that you feel are most relevant to the flood response.

**JANET IVORY:** Let me give a bit of the history of why I am here in the Midwest today. Last summer, along with some of my colleagues at the New York Center for Agricultural Medicine and Health [NYCAMH], I watched, like all Americans, the unraveling of the story of the floods. And, like a lot of citizens, we wondered, Was there anything we could do to help? And being involved in agricultural safety and health, it seemed appropriate that we think about it, and we did. And we thought that perhaps a project that we have at NYCAMH might have some components that would be useful to folks in their efforts to aid flood victims, and especially farm families.

The project, called Farm Partners, is funded by the W.K. Kellogg Foundation. We are one of eleven projects funded under their Agricultural Safety and Health Initiative, about midway in a three-year funding stream. The success of the project has been helped in part, I think, by our foundation of the center and by Bassett Hospital, where we are located, being a large teaching and research hospital in upstate New York.

So why do we have a Farm Partners Project in upstate New York? We are not dealing with catastrophic events such as what has gone on here. But what we do have in our farming community in upstate New York is a lot of stress. It is, quite frankly, part of the farming routine, and through this project that we have organized, farmers can find assistance for their stress needs.

The Farm Partners Project employees use nontraditional case finding. We use both passive and active means of linking people—farmers—to appropriate services, be they social services or perhaps peer support groups. We develop support groups, and we facilitate others that already exist. We try to educate the farm community about farmers' emotional needs. We think that we are helping people who would otherwise fall through the cracks, and I have heard a lot about people falling through the cracks at this conference. I think that those whom we have helped would have done the same had we not been there.

So who are the Farm Partners? The Farm Partners are your routine farm visitors. They are gatekeepers. They are professionals. They are people who work in businesses that take them to the farm. A lot of Cooperative Extension agents are active as partners. We have trained feed salespersons; we recently trained four bankers. We have a hoof trimmer, veterinarians, nurses, farm wives, clergy, and we are even now in discussions with the Schwann's Ice Cream delivery men. I don't know if you have Schwann's out here. They deliver the ice cream to your house—they show up about 10:00 at night with a half gallon of ice cream and, after a long day on the farm, you are really happy to see them. I suggested we get in touch with the Schwann's men. The people on staff thought I was joking, but it turns out our social worker went out on a call and the Schwann's man showed up on the same farm, and she found that the farmer was very forthcoming in sharing some of his problems with the Schwann's man. So, there are a lot of opportunities for Farm Partners.

The project involves a four-tiered model of training, assessment, referral, and education. We train our own staff at NYCAMH because the staff are involved in working with farmers on a whole number of levels, both in the office and in the field. We conduct crisis intervention training for the staff so they can handle incoming phone calls. The partners themselves are trained in an eight-hour session conducted by our project manager and social worker. They learn to identify people in stress. We see it as a preventative thing. If they can identify someone, and just make a phone call to us, that's really all we ask of them. So we do not ask the partners to volunteer much more than the information that they can provide us via a phone call.

The assessment component is done by the staff social workers. We do not ask our partners to do any kind of assessment, but through their home visits they try to identify community and individual needs.

Referral is also done by the staff social workers. Our Farm Partners do not make referrals to social services. They call us and the staff social workers take over from there, leading people to mental health services, social services, peer support groups—a number of resources.

Finally, we try to educate. We educate the community at large, the rural service community, the mental health community. I have heard this week that people feel that mental health service providers may be reluctant to work with farmers. What we have found in conducting orientations for mental health workers is more that they just didn't know. In our case, they didn't know what was going on with the farmers and didn't know much about them. It was a lack not of interest but of information. Now that we have worked with them, we find them to be extremely receptive, and that has been maybe a bit of an unexpected outcome, on the plus side.

How do we know the project is working? We have created databases. We are tracking our contacts, track-

ing the types of mental health issues that they have. We are establishing communication links; we do work with Eastern Washington University out in Spokane. And we disseminate our information via presentations and a lot of publications and media outlets.

We have trained forty-four Farm Partners to date. The last training was about two weeks ago. By the time it is all over, we will have maybe fifty to seventy-five partners trained within the three-year span of this project.

I might mention, too, that we are serving a nine-county area about the size of the state of Massachusetts. Out here in the Midwest where you are talking about nine states, you are talking about a huge chunk of geography. We are serving a much smaller region.

We have had more than 1,000 phone contacts at this point. Most of them are from the Farm Partners, but they are also from other sources. The peak number of contacts are from Herkimer County, New York, north of us bordering the Adirondack Park. Herkimer County has a Cooperative Extension agent who has been particularly helpful and enthusiastic with this project, so there may be some connection between the level of interest activity or the time that the agent has to give. The contacts are growing, and they vary.

About twenty-five percent of referrals to the project are from the Partners themselves, but as you see we get referrals from a variety of other sources—mental health clinics, even the media, from the agricultural nurse program, the NIOSH-sponsored program, the Cooperative Extension Farm Net program (a financial counseling service out of Cornell University), family members, and people from Bassett Hospital. We have had about 250 face-to-face contacts as of last week in our nine-county region.

We have referred clients also to a variety of places, not just mental health clinics, although they represent the largest number. We have referred clients back again to the New York Farm Net program for financial counseling, the Department of Social Services, the Heat and Energy Assistance program, Farm Bureau, Farm Ability, support groups. Mail survey is another way we are tracking things and collecting data on stress. Our project evaluator designed an anonymous survey that we were able to have included in a weekly farm newspaper that has about a 14,000 circulation. It was an easy survey to fill out. It was sent out in February, and we are still [in April] getting responses back. Folks were not required to sign their names, but they have. We have about 800 surveys back now. People not only sign their names, they are giving us their phone numbers, their addresses, their concerns about stress. They are adding comments, and several have said, please call me, please help me, I need you. That kind of feedback has been very rewarding. They express stress issues; for example, we are dealing in the dairy country with BST. There is a lot of stress from the BST issue among our farmers.

What have we learned? Certainly we have learned to listen. We have learned to share information, which is why I am here with you here today. We have learned that screening the Partners is important. We don't want people becoming Farm Partners who are not on top of their own stress levels. We don't want stressed-out Farm Partners. But we do want to help those people who have become Farm Partners manage the stress we find that they are experiencing when they encounter farmers having problems.

The chairman of our advisory board is the general manager of a large dairy cooperative in Syracuse, New York, that serves many states. He called me one day before the project was up and running, and he said, Janet, I've got these field men who are coming in from their visits to the farms who are very frustrated. They are depressed, they are upset because so many of the members and so many of their people are having problems. I don't know what to do. Is there anything NYCAMH can do for us? So we conducted a stress reduction workshop for the field men of the cooperative. That was about the time when we were developing this grant, and it really lent itself ultimately to the Farm Partners. So we alleviate the stress of Farm Partners by being there for them. But, again, we don't want people as Partners who are already very stressed out.

We believe nurturing is very important—nurturing the Partners, nurturing the staff members. We have three social workers in the project. I have had to offer them flexible time schedules because they do so many home visits. And they need their stress taken care of. So we have been flexible with the staff so they can appropriately take care of the project.

Networking is very important with the community at large, with the mental health services. We need to continue, of course, to build relationships and learn to keep the lines of communication open.

We have also learned that you have to have fun. I think if you folks take anything back from this little talk today it should be that it is time for your farmer friends to have fun again. It is a very important part of life. We had a group that got together for an old-fashioned barn dance. And, on the worst night of the year, in one of the hardest places to get to, during our first snowstorm, I almost didn't go. I'll never get here, no one will be here, I thought. Well, I got to this Fire Hall, and 250 people were there, everybody with a dish. They had an emcee, and they danced all night. It snowed and snowed, and nobody seemed to care. From that evening's event a group was formed, and

they gather monthly. In the winter they go to a gym and swim, play basketball. In the summer they have picnics. And it is interesting—this group has formed in Delaware County, and we don't have a lot of calls from Delaware County anymore, because they are helping themselves, and they are going to live long after Farm Partners disappears as a formal project, if it should. That is very important.

The media support us. There was a story on the farm dance: "Farmers Beat Stress by Kicking Up Their Heels." The media have played an important role in our activities and keeping us out there.

We have had some unexpected outcomes. This one I wanted to share with you because it involves Kansas. Last fall we sponsored four farm women—farm wives, farm partners, farm spouses, you have to be careful sometimes—to a conference in Kansas, a rural women's conference. These four women had all been through various traumatic experiences in their farming life and in their lives. A couple of them had never been on planes, had never been out of the state, but they went to this conference and came back so excited. They were energized, and they are now organizing a rural women's conference in upstate New York. That has been very rewarding. They are doing this all on their own—we are only facilitating the process.

In sum, stress has no boundaries—you know that. Farmers are not resistant to a project such as ours; we do cold calls sometimes. We have never been turned down by a farmer. They are very receptive to being helped. We feel that the concept is working. I'll read you a quote from a Cooperative Extension agent in our area: "If I can keep just one farmer from attempting suicide, if I can help one farm family see the light at the end of the tunnel, then it is all worth it." I think that says a mouthful.

That is all I have for my formal presentation. Do you have any questions? I think some of the things we are doing are probably applicable to your situation, which I guess is the recovery phase, though maybe some of the pieces of this project are not.

**QUESTIONER:** Janet, I would ask you to speak to the issue of assessment. It seems like one of the problems that we deal with in our rural family empowerment program is that it is really difficult to make that first entry; there needs to be a level of trust developed before the family will begin to open up. As with your Farm Partners, when they spin off, if you will, their contact to the professional staff, is that issue of building trust, so that assessment can take place, one which is a block to you?

**JANET IVORY:** Interestingly, it has not been a block. As I said, we have never been turned down. Sometimes we respond by driving right out to the farm, and sometimes we call. As I mentioned, we have a program in New York that has gained a lot of acceptance regionally. So when our social worker makes the call to a farmer and she says, Hi, this is Lisa Flacks, I am from NYCAMH, generally there's already a trust that exists. I wish I could give examples where it has been a little harder. Sometimes she stands on the porch for a while before she is invited in. But generally, she is invited in. It is an interesting phenomenon.

**QUESTIONER:** What is the selection process for Farm Partners? What criteria do you use? What problems have you had, and have there been some who have not worked out? Are they strictly volunteers?

**JANET IVORY:** We don't put out a public announcement. We start with informational meetings. We invite people whom we have some professional affiliation with via other staff, or we may just know that someone is a mail caller with such and such a company. We invite people whom we know are already working on the farms. It is a small community. So there's sort of a screening situation just by the nature of the work they do.

After the informational meeting we've had situations where folks have not returned to be trained. So there has been kind of a self-selection process. We haven't had many problems. We have had, I think, one person whom our social worker was nervous about training as a partner, but he kind of eliminated himself after the informational meeting. We haven't had a lot of problem situations, I think probably because we are inviting people whom we know are working out on the farms already.

**LARRY CHAPMAN:** David Hinds is the associate director for the Local Government Center at the University of Wisconsin Extension in Madison. In his ten years with planning agencies in Illinois, Indiana, and Wisconsin, David has worked at the community level with a number of communities recovering from disaster, including the village of Barneville, Wisconsin, which was almost totally destroyed by a tornado in 1984.

**DAVID HINDS:** Thank you, Larry. I first started getting interested in disasters during my childhood, when I was, I would have to say, a frequent victim of natural disasters—flooding, hailstorms, tornado, windstorms, and the like. I grew up in Joliet, Illinois. And for some meteorological reason or another a good portion of that community gets hit by something usually one year in four.

In 1956, our family was totally flooded out; we lost the car and everything. The one thing I don't remember in experiencing disaster as a child is getting much help. And I think things have changed considerably since then. Over these past days I've listened to many of you share information that says they have changed. And my experience in working with FEMA, state agencies, and others in the field has been very rewarding. I think the effort that all of you and others put forth is outstanding, though I see the frustrations that happen during disasters as they unfold. I hope that what I'm going to talk about today will help contribute in some way to helping the various levels work together, especially helping the local community work with all the outside help that is coming in.

I've always worked at the community level, and I see problems develop as certain things happen between the community and the outside helping agencies. Often it is because something in the community is broken—they are not working at their capacity, they are not working at any level of capability in operating as a community. In fact, one of the frustrations I used to hear frequently from FEMA people was, Look, we've got all kinds of resources on line here, we want to come in and do XYZ; we think it needs to be done, but we can't get a decision out of the community.

And, of course, the reason is that all the decision-making structures in the community have fallen apart. Well, I have written a proposal through the Kellogg Foundation. It is being reviewed right now, as a matter of fact, so if any of you are so moved at the end of this and feel that you would like to write a letter of support, there is a letter up here.

Today I want to share the ideas that are in the proposal, because I think they are very useful. And I hope that some of this can get turned around in your creative minds and in your states and that perhaps you can find some ways of implementing some of this. My proposal is for Cooperative Extension. Why? Because Cooperative Extension is all over the United States. It has locally based educators, the agents, and I think having local people on hand is critical in making disaster recovery work. The proposal really deals with two things: one, what communities go through in disaster recovery, and, two, how to assist the communities in conducting a successful recovery.

I am suggesting, if this thing gets funded, that expertise and educational materials that get developed reside at the state level. Why? Because agents are just like the communities where they live. They tend to say, It's not going to happen to me, and I've got 850 other things on my agenda here, and I'm not really going to pay attention to getting trained in all this. So the idea is to have state specialists with materials, ready to go, so that when a disaster strikes, in any part of a given state, a state specialist can go in and train local Extension people who then can function and work. The idea, too, is to have Extension agents working with communities throughout recovery. We have been reminded here that recovery certainly isn't something that happens quickly—it goes on for years after a disaster.

The proposal I have made deals with many functions carried out, many actors, in disaster management. It deals with recovery and focuses on communities. A disaster is, by definition, something that happens to a community of people. If we had the river going over its banks out here and there was no economic activity, no people involved, then the only sound you would hear would be the people from the wildlife organizations cheering because nature was taking its course. So we have to somehow have that community of people involved before it is really a disaster. Recovery, as I mentioned, at least the planning for it, should begin at the moment of impact, even though the people involved with recovery may not be on the scene.

One thing I have learned over the years is that effective recovery cannot be imposed from the outside. Look at how much information we have talked about, just this morning. People are generating and amassing huge amounts of useful information. But if there is no community structure, if there are not residents who are in some kind of shape to be able to use that information, it is all for naught. Working with communities goes hand in hand with the information—you can't use one without the other.

What happens to communities in disaster? We are all familiar with the physical disaster: the river rising, the houses under water, and all of that. I want to talk about the social disaster that happens, the series of crises that occur primarily during the recovery period, oddly enough.

Let's start during the disaster warning itself. During that disaster warning, predisaster relationships and bonds tend to strengthen and responses to the warnings begin. People turn to the people that they know in the community for confirmation about the warning. How high is the river going to be? How bad is this storm that is coming? At disaster impact, the bonds disappear temporarily and are replaced with efforts to survive. People experience a sense of disorientation during the impact. Relationships and interactions are often indiscriminate. You are friends with anybody who can help. The prevailing order of community relationships is often suspended, including the relationships of individuals to authority.

Incidentally, I am speaking about disasters generally. I seem to have heard from a lot of people this year, including those in FEMA, that the work they do in disaster management is about 85% the same for all disasters, and the other 15% will vary according to what the disaster is.

I think one of the biggest differences with the floods of '93 is that the period of impact is much, much longer than in any other type of disaster, even other types of floods and flash floods. That impact is a matter of a day or so, at most. With tornadoes you are talking about seconds, minutes. Following the impact, the community social fabric tries to reassert itself. People rebond to others. The bonding intensifies—often, again, without discrimination of any type. And this intense camaraderie develops. When I was working with Barneville, the tornado disaster community in Wisconsin, this was unbelievable. There was a heroic phase to the community. This is when signs get painted on the sides of the buildings: "We are not letting this top us." "No fear," as we saw on one roof out here. Intense community bonds form. This is very attractive to the press—there are a lot of good pictures, a lot of good interviews at this point, where people get up and say, Yes, we are not letting nature force us out of here. We are going to make it. This strong sense of community develops even to the point that outsiders are excluded. And outsiders are, of course, defined as people who haven't shared in what? The impact.

People in the community often express this as a period of euphoria, almost a high. The problem is, it doesn't last. What usually sets in, often within a period of days, is a period of differentiation—where individuals have quickly bonded together into this very strong community, suddenly those bonds dissolve and the community begins to differentiate. And people look for ways to organize themselves in complex subsystems, as they usually do.

The appearance of differentiation is what is actually supposed to mark the beginning of the recovery phase. Once that strongly bonded community disintegrates, recovery is beginning. One thing I think is important, though, is that in a way the community tends to define when recovery begins, not us. Confusion and turmoil often mark this process. Residents frequently feel disoriented. Why? Because new groups have sometimes formed. Often negative emotions are involved—anger, resentment, envy, competition—depending on a variety of factors, like whose property sustained the most damage. In the case of the Barneville tornado, as an example, 80% of the community was destroyed. But some homes in the community were not touched. And curious things began happening between people who had totally lost their homes, people who had only had moderate or light damage, and people who were untouched. When the community started differentiating, it happened according to the degree of damage and injury, and the people without damage were suddenly more on the fringe of all community activities. In many cases, predisaster friendships and even family bonds, which now span these subgroups, do not survive the recovery process.

At about this time, too, some of the social structure of the community starts trying to reassert itself. Local government, local agencies, organizations try to get back into functioning, and you start to see some of the old patterns, from before the disaster, reemerge. But circumstances are not the same in the community, as residents soon find out—they have altered radically.

Every component of the community is challenged with adapting to the new situation, and a new set of tensions emerge at this point. I have observed a very strong desire on the part of disaster victims to restore things exactly as they were. There seems to be a single-mindedness in many communities to do so, and sometimes we have to work with them to not expect that, because it won't happen.

Because issues which form the basis for differentiation into these other groups and for restructuring are not consistent with the issues that existed before the disaster, conflict often develops between the old structures trying to reassert themselves and new ones emerging. Going back to Barneville again, I was doing quite a bit of work with the village board, trying to get them up and running at some level of functioning so at least they could interact with FEMA and the outside agencies. At the same time, all this differentiation was going on. We found some ad hoc groups forming in competition through the elected local government, trying to deal with the same issues. We found also that some members of the village board were not capable of adapting to the new set of circumstances, and they came under a great deal of criticism and attack by some of these other ad hoc organizations that were forming.

Sometimes the conflict is enough to replace the leaders of predisaster organizations. In fact, in Barneville the village president not only was replaced but felt that he had to leave the village. He was that differentiated from others in the village. If the incompatibility gets great enough, though, the structures themselves may be cast aside. We saw this in Barneville also. Some organizations in the community did not survive—they became irrelevant, they were not able to adapt, and, in fact, the people involved with them cast them aside.

The effects of disaster, I think, are especially disruptive to local government and its ability to lead and

participate in recovery efforts. During the impact, people are disoriented and this prevailing order of relationships is shattered. Local officials themselves are often victims. A picture that will stay in my mind forever is the first meeting of the Barneville village board after the tornado. Every member of that board had visible injuries—casts on arms and legs, back braces, bandages on heads. It made you understand visually why they were having trouble dealing with anything. Another thing that happens is the takeover of local government. That is probably not the best word to use from your point of view, but from the local point of view you hear it from time to time, that they sense a takeover of local government functions by federal and state agencies right after the impact, during the response especially.

These organizations often supplant local government. The question is, How do we later get local government back up to reassume some of those functions? At what point, and what is the best way to do that? How do we help local government leaders and leaders of other organizations recognize and adapt and transform to deal with all the new situations that the disaster creates?

That's a bit of an idea of what goes on with the community during a disaster. I am going to talk briefly about what types of things I think Extension agents and others can do to help communities get back on their feet.

One of the problems during disasters is this sense of isolation. During the period of differentiation, people often isolate themselves from others who have not been in the disaster. They can isolate themselves geographically. They can isolate themselves according to what type of injury they have. There are all kinds of creative ways where people and groups of people can get isolated. I think it is very important to be there, and I am proposing that Extension agents be there, to provide information on the disaster and on the resources for beginning recovery. Many of you are involved in doing that, and you do a good job of it, but I am suggesting too that we have someone locally on hand to help explain, if that is necessary.

Making efforts to explain to people, trying to get them to understand what happened, what to expect, is one of the big things that we find in communities. I am sure you find it. There's a fear of the unknown. Trying to get maximum participation when we have community meetings is sometimes extremely difficult. In Barneville, about 95% of the residents of the village were unable to live there because of damage, because of electrical, water, and other problems. So we had people scattered in about a 150-mile area, and it was very difficult to get people to communicate. We had to come up with some very creative ways of doing that. But it's important to get that isolation factor down.

Trying to address specific needs of groups like youth, the elderly, people with disabilities, and others with special needs is very important, too. It is very easy for people in some of these groups to get even more isolated.

Restoring a sense of control is key psychologically, for the community, for the individuals in the community. The community needs to restore as quickly as possible a sense that it can control its own destiny. This is a feeling which often conflicts with the need for outside help, and you will see conflict among people in the community and local government, between their need to control their own destiny and their need to keep reaching out for help from outside.

Much can be gained from professional advice and guidance in anticipating needs and planning interventions, which can use or work with emerging community structures and resources at this point, too. The new organizations, these new groups that start forming, begin working with them. I contend that the sooner a community can regain this sense of control, this minimum level of decision making, the easier it is going to be for that community to work with the outside agencies.

The third element, another critical one, is group and network formation. Extension educators, I feel, could provide the initiative and promote the formation of groups and networks in the disaster-affected community. It is necessary to provide a constructive, coordinated framework for the process of differentiation. Where communities have not had help at this particular point, we see competition, anger, and envy among the groups that get differentiated. This is a lot of very positive energy coming out of the community. This is an attempt on the part of people to bounce back, and it is a point where I think some critical outside help, or help from someone like an Extension agent, could channel this energy toward positive things that need to get done, giving people positive reasons for identifying with each other again.

The fourth element, communication and information, is equally important. The lack of information in a disaster is a source of major stress in recovery efforts. We have certainly seen a lot of information being generated, and I feel very good about that. Last time around that was one of the big areas where I had a lot of trouble, just getting my hands on good information when I needed it. In fact, if I had this proposal to write over again I would put in another section about carrying a portable computer at all times with the CD-ROM and the Internet capability.

It is likewise very important to have meetings where individuals can exchange experiences, understand other problems, help develop feelings of mutual understanding. Surprisingly, this doesn't necessarily go on. Sometimes we need to provide a little help at this point for people to come together to start sharing their experiences during the disaster.

The fifth element is community development. I think Extension is in a very good position to do this, locally and over the long haul. A big portion of community development, of course, is economic development. Here a lot of information needs to be brought to bear, to help local decision makers choose what course of action to take, especially if destruction has been heavy and rebuilding is involved. Often large sums of money are being poured into the community by insurance companies, by FEMA, by the state, by other sources. The community needs good guidance and some assistance on what they are going to be doing.

In the case of Barneville, for example, this was a community that had never had a community plan, did not have a zoning ordinance. We were able in ten days to prepare a plan and get it adopted, with hearings and everything—a new zoning ordinance. We created a zoning board of appeals and a plan commission and got them trained and up and running. These were very important developments for that community, because things in the rest of the world were changing. A new highway bypass was just about to put them into the Madison commuter shed. They had been sort of an isolated community. A new state bicycle trail brought other business opportunities, and there were a number of other things that hadn't been taken into account. This was a good point at which to sit down and look at all the options, open up the whole thing, and say, All right, if we are going to talk about coming back, what is the best way to do it?

Other communities in our state have gone through this after a major disaster. Soldier's Grove, for example, decided that they were tired of being flooded out. They looked at all their options and decided to move. They picked up the whole community and went on top of the hill.

One of the negatives that occurred in the village of Barneville was that we still had a lot of people who had worked on the Soldier's Grove case. They had moved the whole community of Soldier's Grove after the flood; they had a lot of federal dollars to do this. They did a lot of innovative design, with solar panels all over the place—a very nice job. Well, a lot of these people were still in the area, and they descended on Barneville after the tornado and began trying to sell these ideas that, Oh, this is just like Soldier's Grove, and you ought to have all this solar stuff, and did you ever consider moving, and so on and so forth. After about a week of this, the village board asked me to ensure that no one ever mention the words *Soldier's Grove* or *solar* in Barneville again. The lesson here is that what had been a very good solution did not travel well. The community needs to be thinking about its own alternatives, its own desires, its own particular culture and where they are going, and why all the solutions can't really be brought in from the outside. We can have the pieces, the information that they need, and everything else, but the best kind of recovery is really done by the community itself.

Symbolic events are often overlooked. Psychologically, emotionally, if this community is going to hang together, and not all of them do, it is going to have to digest the experience of the disaster, to incorporate it in the fabric of its history, in its culture. If there were people killed or injured, the community must find some way of honoring those people and remembering them and somehow deriving strength from all of that bad experience. They may need some help in designing symbolic events.

In Barneville we had specialists from the Department of Landscape Architecture at UW-Madison come out and help design a park in an area that had seen particular devastation. Right on the new bicycle trail, with an observation tower, are pictures in metal of what the village looked like before the tornado, commemorative trees. We had ceremonies to do that. We found that they really helped people get more in touch with each other. Commemorations helped people build new common experiences based on the disaster that they may not have had before.

I think most of us who help communities in disaster focus on helping the individuals, and that is absolutely necessary. Families are the basic building blocks for communities. But I would challenge you to try to learn more about, and try to focus as much as you can, on the interactions between those individuals and families at the community level. See what types of things you can build into efforts to help strengthen the community so that the families involved in disaster are better able to interact, even better than they were before the flood, so that they make good decisions, so they get money that is provided through disaster assistance. They have the power to build consensus in the community, to make decisions that are going to stick and to wisely spend that money so that they don't end up making big mistakes and seeing their efforts fall apart.

**QUESTIONER:** I am curious as to what you envision as a relationship, in terms of your proposal,

between the Extension agent and the emergency management people in the communities.

**DAVID HINDS:** I would envision an Extension person there in an educational role to assist the community with anything it needs to do to develop those six elements I listed. The relationship with FEMA is, I think, something that we have to instruct Extension people on, too. I am not proposing that we put in a local disaster coordinator on the spot. Rather, the point is to help get the community organizations, primarily local government, up and running so that the other organizations, FEMA and the like, can properly interact with them.

I have done this myself in several cases. You do have to be careful so that people don't misunderstand what you are trying to do. One of the things I think I did very well was to help explain to local people what the outside agencies were trying to do for them. Very often this was not widely understood. It's important to get people to recognize the opportunities being presented to them, to help them work in that fashion, but not to be a go-between, or anything of that type.

**QUESTIONER:** I want to support exactly what you have said. Of the speakers that have been here these three days, you are the most on target, if you view the victims as customers. And that is really what they are. We are trying to get something to them that they need, and what you said is absolutely true. The distrust and loyalties and the shoulder-to-shoulder things that go on, all that breaks down. The feuding and fighting start. Subgroups appear. They may or may not stay where they are, but all the in-fighting is there, and somebody has to be involved who can help sort that out and mediate.

I do exactly that—a lot of mediating. We have had counselors come in and talk to these subgroups, and it has helped a lot. As an outsider, I hardly knew what the Cooperative Extension Service did. Their E-mail system works well, and they have done a lot of good things. They are probably the closest to the customer, or the flood victim, that I have seen, because the calls come into our office all the time. We have a toll-free number set up in a newsletter, and people are constantly calling us to ask about their lawns or trees, can they plant gardens. So what you are saying is true, Cooperative Extension is a low-level process that can really be a big benefit, and the others that come in don't have the knowledge that Extension already has, because so many are part-time employees. Most of the FEMA people I deal with are one-year contract employees. All of them are wonderful people, and they try hard, but they don't have the job experience because they haven't had time to get up to speed on what they are doing. By the time their contract's over, that's when they can be of big benefit. They have to establish credibility with the flood victims, day one. And that is really hard to do. But keep doing what you're doing.

**QUESTIONER:** I would echo what he said; I thought you had one of the most thoughtful and excellent presentations we have seen. A couple of things pertinent to this flood are I think variations on the themes you talked about from Barneville. You talked about needing to regain that sense of control in the community, and how that conflicted with the need for outside help. In this disaster in particular, it also conflicted heavily with the fact that many of the decisions, because we were dealing with floodplains, were not local. They were federal and state decisions about base flood elevations and levees and buyout bills. Even though the disaster was last summer and early fall in most places, the buyout didn't become law until January, so people weren't even sure what their options were going to be.

And then as we moved into the buyout process, some communities just leap into it and say, This is a wonderful opportunity, we will never have to get flooded again. But for other people who have deep personal ties to that place or who have their ego wrapped up in being a city leader, taking the buyout is compromise. Some people have been bitterly opposed and have tried to make residents who wanted to take the buyout feel like the scum of the earth. So the need to regain control in the flood disaster is different from a tornado disaster, where you don't have all those other players who have legal precedence over what a city board of aldermen or a village board can do.

You also talked about a major part of the recovery piece being community development, and economic development being a big piece of that. In this disaster, a lot of communities were told that you don't want or need and won't even be allowed to have any more economic development. So it's not the same kind of recovery process necessarily in the flood that it is in those quick disasters.

**TED SCHARF:** As I understand it, we now have three tasks to accomplish. First, we would like to have you reconsider the conference theme. Second, we would like to get more of your ideas about what works and some detail about how these things are accomplished and what the problems were that led to them as solutions. Third, we would like to suggest that you take the time to finish up your action agendas about what you plan to do personally and also in your state.

The central theme of this conference is coordination and communication of information. In the last two and a half days I have heard people from many states describe what worked, but very often whatever solutions people came up with had a component that involved better communication between people in government agencies, between the agencies and individuals who were affected by the flood, or between the individuals themselves. Last night Gene Freund, to my way of thinking, articulated the conference theme in particularly compelling terms. I wonder, Gene, if you would like to do that once more.

GENE FREUND: We started this meeting with communication and coordination as a kind of an overall theme. And everything that has come out essentially reinforced that. We've shared more specific examples of just how those issues were particularly important and what, in terms of planning for future disasters and for the recovery from this one, really needs to be done at the federal and our individual state levels.

So what do we need to do next? Where do we go from here? We kind of divided it into three basic things. We need to come up with a proceedings that summarizes the basic issues and has some nice solid recommendations for what people, not necessarily us, need to do. We need to come up with the things that we can do, ourselves, to make a difference as time goes on. And we need to compile a collection of what we called the Helpful Hints—resources and ideas that have worked. Larry, you probably have some notes that can fill in.

LARRY CHAPMAN: My understanding from what we discussed last night was that we were simply going to go through the process of confirming with the audience that communication of information and interagency coordination is in fact the theme. Is that something that everyone feels they agree with? Do you feel that this conference in fact brought that out as the major theme?

Yes. So that means we can move on to the second task. One important outcome of this conference and workshop is a record of the best ideas, the success stories that you all developed during the flood response and recovery efforts. We have all heard these in the meeting that Gene described last night; they were coming out of people left and right. A lot of them we have already heard in some detail in the transcripts from the state groups and the issue groups.

Brad Rein suggested that it makes sense for everyone, if they can, to try to come up with one idea, one success story, one thing that it makes sense to extend or to make available to people in other states or people in future disasters. What idea has made a big difference in your state, in your community, in your agency?

Let me provide an example. Yesterday in the mental health group, some states agreed that there were often differences, and more than a little friction, between mental health professionals, the clinical people, and the paraprofessionals who were out in the field doing the actual work. Everybody wondered, How can you bring these two groups of people together? How can you minimize the lack of coordination, the fact that information doesn't travel freely between them? Illinois said, Well, we solved that problem and it didn't cost us anything. They assigned mental health paraprofessionals the job of recruiting a buddy from the clinical professionals in mental health in their area. This facilitated communication of information from professionals about research findings, about new methods in the literature to the paraprofessional. The paraprofessional, on the other hand, was able to keep that academic clinician more in touch with what the real problems were—what was going on in the street or in the communities or with the people with problems. What did it cost? It cost some time for lunch. It cost some time for calls on the phone, maybe a few hours a week.

Gayle also described an example that she heard of in one of her groups. I wonder if I could ask her to come up and relate that.

GAYLE OLSON: The example described in our group was a very simple, painless process to identify where people are located. They described a series of educational meetings that were helpful in dealing with some aspect of the flood recovery. Part of the meetings included having some sort of a local governmental official, whether it was a city clerk or a county government person, to basically log in all the participants to identify who attended and where they were staying—within the town, with relatives, at some sort of emergency site, wherever—so that if any communications needed to go to those persons, they were listed someplace, rather than having to send out an individual search team. They tried to gather that information on as many people as possible and then collect it at one location. That became the first reference for trying to identify where people were located. Very simple, very painless, not very time-consuming. In fact, the time they were able to save was pretty phenomenal.

CARL SWON: A variant on that, Gayle, that we did in Clark County, and I understand that Hancock

County did it even better—after the levee broke at Alec, we had about 450 people dislocated. We didn't know for sure who all of them were, how many had small children, how many had special needs. But when FEMA, the guys in the white hats supposedly, came roaring into town and set up a disaster application center at Wayland, which was up out of the floodplain, we figured that all of the flood victims would come to see if they could get money.

I'm an Extension specialist in community development in that part of the state—a local associate circuit judge and a local accountant and I sat down with the county commissioners and we said, We've got an idea. FEMA is going to make all these people come through the same door just to keep order, so let's set up our table right by the door. So we wrote Clark County right on the table and we had our survey form. Once FEMA gets these people, they can't, for confidentiality reasons, share with the county what they know about them. And they can't share case information, and that will never change, I don't think. But we went ahead and found out where they had lived before, what their prior mailing address was, where they were staying now, and if there was a phone where they could be reached. We asked how many were in their household and their ages, particularly if there were small children or elderly. We let them know that if they had special needs such as diapers and formula, local relief people could help meet those right away.

We live in a rural area where there is no surplus housing, no place for 150 households to go. So we asked people, If it is possible, would you like to have a FEMA mobile home? FEMA didn't tell people they could get these, but the county officials knew it. So we created a wonderful database of where everyone was, where they had been, how to get ahold of them, and whether they needed housing. Though FEMA was irritated at this, the county then was able to basically lobby on behalf of 117 households who all said they wanted mobile homes and to get those things moved in there. As I understand it, it wasn't fast for the flood victims but was comparatively fast by FEMA standards.

Hancock County did an even better job at tracking people. This was just something that occurred to us, that it was information we would need. But according to my Extension colleagues, it was not done in most locations, and this created many problems down the line. In a disaster where people are dislocated and dispersed, if you don't catch them right away, you will never find some of them again. This is a problem for school districts and for election authorities and other people.

So this is an idea that you might wish to take back. It is a place that Extension people can help because we do typically have some computer knowledge, and this is more critical in rural areas. Rural sheriffs' departments don't have the spare manpower first of all, and probably don't have the computer expertise to quickly set up a database program and get all this together. But Extension, in most places, can do this; we are right on hand, and timeliness is critical. You've go to be there immediately.

**TED SCHARF:** Do we have someone else from the audience who's got one of these that they would like to share with the group?

**SPEAKER:** I am from Hancock County. I come in rather late to the recovery process, but what I brought, different from the person who had my job before, I brought customers. And that is the way I looked at the flood victims. I'm a private business, and I look at them as customers. I work with flood victims who are trying to recover, whether that be help with a medical bill or a sheet of plywood, or literally anything. I work and interface with everything they are having difficulty with. And they are having a lot of difficulty. It may appear at the top that everything is working wonderfully and great, but I can tell you from a flood victim's perspective it is not.

Part of the problem is the multiple departments that administer sections of recovery. One department picks up the roads. One department picks up the buyout. One department picks up the elevation. If you look at it as a customer, I don't care who picks it up, who pays for it, where it comes from, but I want you to deliver me an intact package of options. I expect those options to be provided in a timely manner. I know we have probably moved faster this time than we have in a lot of cases, but from the victim's standpoint, who is the customer, we have not moved nearly quickly enough.

If you put an elderly person out of a home, you put a family out of their home into a FEMA trailer with three or four kids, with sometimes not a lot of their possessions, they may have lost their job, have lost their sense of contact with everything that was home—that structure becomes mighty small mighty quick. If you are concerned about stress and dealing with stress, then you have to get those people out of that stressful condition as soon as you can.

Now you can send in a lot of assistance that will help, but you are not going to stop the stress until you get them out of the stress environment. The way you do that is to put life back in some sort of resemblance of what it was. In my opinion, based on what I see on

a one-on-one basis every day of the week, for over five months now, at the instant some type of disaster occurs, a toll-free number needs to be established. It has to be an 800 number; it can't be a toll number. That number needs to be answered by someone who has a spreadsheet in front of them that you data-fill. I want to know what their disaster location was, where they are going, what their phone number is, what their address is. I want to know if they have any immediate needs.

We didn't do that exactly at the time it should have been done. We didn't know that either. But looking back I know that is what should have happened. Once you establish an address and a telephone number, you can contact those people. Then you can supply information. Now when you get that information out, you have to be real, real tight with it. If I'm going to deal with Hancock County, I've got to make sure when I put it in the news and I ask TV to cover it that they understand that I am only talking about Hancock County. Or, if someone wanted to take it a step further, like on a state level, you could data-fill Hancock County, you could data-fill Adams County, you could do whatever you wanted. If you are going to help people you've got to know where they are, and you've got to know what they want. Once you do that, the job becomes a lot easier.

We send out a monthly newsletter. We know where everybody's at, so now we can communicate anything that any agency wants them to know. We even went one step further, we did a one-on-one—and that's what recovery comes down to, guys, one-on-one. Until you get to that level, you are not going to get anybody recovered. We ask a series of questions. If you are going to provide assistance, you've got to have at least a little bit of basic information.

And it is true that you can't share some information with everybody, but if you are going to need help moving sandbags, yes or no? If you punched yes, then all we have to do is go to the computer, pull up question number 18, and I can tell you everybody in Hancock County that's going to need help moving sandbags come spring. If you needed help with a light bill, question 19. If you had trouble with stress, that was question 20. If you plugged in yes, what we did was share that information with the people who could provide help. If you were 60 or older, we can provide that to the Department of Aging. They can do all kinds of things. If you need help with winterization, we can provide that information to the people that provide help. All these things are available, and if you can get them together, it really works easy.

We recontacted these people by phone to ask if all of their needs have been met. By the time we get to them, some of the needs have already been met; a lot of them have been met. But a lot of them haven't been met. There is no reason why everybody else couldn't do the same thing. It depends on whether you want to take it a step further. We had a very small staff—there are only two of us. What we did was to organize a county. The initial thought of the county board was that the person who does what I do, the county coordinator, would take responsibility for coordinating everything. Great idea. Doesn't work.

Just like the guy from Wisconsin said, little things materialize in these communities. Little groups come forward. Little groups pick up responsibility. What he said is so on target, because it is true. You know, the shoulder-to-shoulder on the sandbags all happens, and then all the in-fighting occurs, where people don't agree and that's their lot. I'm not sure we had all the answers, a lot of our answers come late. I can tell you that much, but I thought that was what this conference was for, to share that kind of information. I am not associated with the Cooperative Extension; I just happen to work there. But, as an outsider looking in, their system has worked.

**ROGER WILLIAMS:** Larry asked if I would briefly go into more detail on the Farm Family Support Network that we are trying to create in Wisconsin. Let me start by emphasizing that you not overload farm families at this point. Because, as I explained yesterday, they may be experiencing ten years of stress already, and then the flood event comes as a capstone.

In essence, we have a very, very important resource in our state. Our Farmers Assistance Hotline does a marvelous job of responding to calls from all across the state of Wisconsin. In the month of March a staff of about five responded to 900 calls. They are in turn linked to a statewide system of farm credit advisors from the Department of Agricultural Trade and Consumer Protection, where the hotline is located. They are also linked to a system of mediators and arbitrators who can get farmers linked up with creditors and get a negotiation process going to better deal with the financial situations that farmers are experiencing.

But not all farm families are familiar with that hotline, and not all people who are in positions to know farm families in distress know about it and how helpful it may be. We are not always able to link farm families with the emotional resources that they need in times of distress, because our mental health system has been geared primarily toward chronic mental illness. What we are trying to do with our portion of the FEMA project is to develop some of those linkages into and out of that system to create more of a seamless

web of services, if you will. It is basically a process of training people like milk haulers, veterinarians, ASCS staff, SCS staff to be gatekeepers who not only identify a problem but refer farm families to the services that they might need. And quite often that first referral is to the Farmers Assistance hotline, which then may make referrals to a farm credit agent or an Extension agent or mental health or whatever. That's one level of training.

Another level is training professional human service providers, and to try to bring them on board as partners in this process so that those referrals can be made. The development of support groups and of crisis outreach workers in the state are additional components. So we are trying to develop more of a seamless web of activities, building on a resource that is already in place in Wisconsin. I hope that makes sense.

**SPEAKER:** In North Dakota, through our health department, we have an environmental services division and under that are many different divisions—surface water, solid waste, storage tanks, and so forth. In North Dakota, and I'm sure it is available in other states—though I don't know how this applies to the flood because we really weren't affected as severely as most of you—there is money available through the EPA for storage tank removal. So that is something that you might want to check with the EPA representative in your region.

**TED SCHARF:** Yesterday in our state groups, we had a worksheet in the packet to line out some action steps, what you want to do when you go back home. I don't know if all of you are like me, but when I go back home I'm all motivated. I have all these great ideas, and then I see my list of E-mail messages and my pile of mail and the phone calls that I need to return and all the things that I have put out of my mind while I've been here this week, and suddenly this goes out of my mind too.

If I have something written down, if I've committed with another group of people who are here, those steps are much more likely to be followed up when we get back to our own offices. So what we would like for you to do now is keep these ideas in mind, keep these rolling. We would like for you to get into your state groups again and identify something that you would like to follow up with back home.

**LARRY CHAPMAN:** I want to thank all of you for coming to the conference. Have a safe trip out. I would like to thank all the federal people who were here, because they are very key players in this whole process. Thank you for your support, your dedication.

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