Interagency Risk Assessment Consortium
Fall Quarterly Technical Meeting
October 4, 2006

Technical Meeting **9:00 am – 11:00 pm**

Introductions

3 Minute Updates:

Department of Commerce
National Oceanic & Atmospheric Administration (NOAA) Fisheries Services
Angela Ruple

1. They are finally back in a fully functional laboratory after their laboratories were destroyed by Hurricane Katrina. They will be in this temporary facility until the new laboratories are built within 2-1/2 years.
2. NOAA Fisheries had two visitors from Vietnam this summer from 2 institutions: a quality control expert from National Quality Assurance and a veterinarian from the Veterinary Directorate. They wanted to learn more about risk assessment.

Department of Defense
US Army Center for Health Promotion and Preventive Medicine (CHPPM)
Brandolyn Thran

1. The anthrax risk assessment on inhalation is complete; currently in editing and security review; hopefully will be available for review by the IRAC and outside agencies soon.

2. Had another successful risk assessment training course. The focus was on concepts, and not actual modeling. Fifteen people participated.

3. CHPPM is working with Syracuse (Peg Coleman) to develop an Access database on dose-response information called the Pathogen Information Catalog (PICAT) with pathogens data. They have started with anthrax but hope to add other pathogens. They have incorporated 32 old army studies from the 50's and 60's. They now have ~15,000 records on anthrax. The cut-off will be after incorporation of the latest studies. After that, they will continue updating the database. Have enough data to think about analysis/combination.

Environmental Protection Agency
Office of Water
Steven Schaub

1. EPA/OW is soliciting reviewers for 3 microbial risk assessment documents this fall.
   (i) Microbial RA protocol for water based media. It consists of 100 plus pages and has already been reviewed by some experts in the field. Steve will send to Marianne to send to the IRAC representatives for comments.
   (ii) Companion thesaurus of terms used in microbial risk assessment. It has been reviewed by EPA's Risk Assessment forum, DOD, FSIS, and WHO, and is currently under revision. One outlet for further distribution could be the JIFSAN Food Risk Clearinghouse.
   (iii) Have developed a Human Health Methodology for establishing future Ambient Water Quality Criteria for regulatory purposes. Document will be reviewed by EPA and will become the guide for future water based microbial criteria development.
   (iv) Microbial Risk Assessment Framework evaluation. EPA is working with FSIS looking at all the microbial risk assessments to see how they can be used by EPA and others in developing Interagency MRA Guidelines.
   (v) EPAs Risk Assessment Forum is in the late planning stages for a symposium in the Washington DC area in early spring, February/March looking at effects of chemical immunotoxicity and susceptible populations (life stages), and their impacts upon dose response and severity of typical microbial infections from environmentally based microorganisms.
   (vi) Through a contract, EPA is developing a protocol for Risk Communication to accompany MRA guidance. There is a shortcoming in knowledge on how to communicate microbial risk assessment. This effort would provide some uniform guidance on what should be considered in communication of risks at various levels of regulation. Three academic risk communications experts are developing case studies and guidance on this effort.
   (vii) EPA/OW is working with USDA and Department of Defense (DOD) to develop interagency guidelines for conducting microbial risk assessments (MRA). Once in draft form, the work group would like the guidelines to be reviewed by the IRAC. Kerry Dearfield followed on that the MRA Guideline Work Group has a wide range of representatives, including 2 offices/centers from FDA, DOD, EPA, Department of Homeland Security, and USDA. The work group is at end of first phase getting everyone to mesh together. They are looking at what is out there – including what are the good pieces of information and procedures that are available in existing MRA frameworks and what other documentation is available that would help in developing overall guidelines, including Risk Communication. The group meets on the second Tuesday of each month. Only CFSAN is not involved – still invited. They are almost ready to start writing. Preliminary formative work will be presented in a symposium at the Society for Risk Analysis Annual meeting in

December, 2006. The panel members will consist of: Janell Kause (USDA); Steve Schaub (EPA/OW); someone from DOD; Tonya Nicholls (ORD, Cincinnati); Rebecca Parkin (George Washington University); Greg Claycamp (FDA/CVM); Joan Rose (Michigan State University), and Chuck Haas (Drexel University).

Food and Drug Administration

Center for Food Safety and Applied Nutrition (FDA/CFSAN)

Richard Whiting

1. *Listeria monocytogenes* in smoked seafood. Have a baseline model and are now calculating mitigations. This is a process risk assessment; the intention is to understand where and how changes in process affect food safety. The best data came from the FPA retail study. Using these data, the risk assessment team is back calculating to determine the level of *L. monocytogenes* at each step in the baseline model and t hen use that model to evaluate different mitigation steps.

2. *L. monocytogenes* in smoked cheese and soft cheese in collaboration with Health Canada. Steve Gendel is the project manager. The risk assessment team went to a Wisconsin cheese manufacturing plant in August to see the process in action.

3. FAO/WHO/Codes activities.
    a. Microbiological criteria paper was developed for the Kiel conference. There were vigorous discussions but the members have not reached conclusion.
    b. Bob Buchanan, Dick Whiting, and Mark Walderhaug conducted a risk assessment on *L. monocytogenes* in smoked fish using Analytica. The model will be presented at a meeting in Netherlands in late November to further the discussion on establishing Food Safety Objectives (FSOs), Performance Objectives (POs) and Microbiological Criteria (MCs). They would like to post the model on the Clearing House to make it available and allow people from around world to try understand it.

4. Commercial sterility under investigation at FDA Moffett center. Non-traditional processes for sterility such as irradiation, high pressure processing and other newer techniques are forcing a reexamination of what constitutes commercial sterility. A reduction of 12D for botulinum toxin has been the standard, but a risk-based criterion would define the standard, for example, as a 10^{-9} probability of botulinum toxin being present in a package.

Marianne Miliotis

1. CFSAN Reorganization Effective early November

2. Virus Risk Profiles
    a. Status of documents: both risk profiles revealed several areas in the farm to fork continuum for control and preventive strategies. Representatives of the risk profile team met with risk managers to obtain their RM recommendations to include in the Hepatitis A and norovirus risk profiles. The risk profiles are currently under revision.
    b. Cruise ship visit. Members of the norovirus risk profile team visited a cruise ship and a navy ship to obtain first hand knowledge and compare how norovirus outbreaks can occur and how they are prevented and controlled on a cruise and/or a navy ship.

Center for Veterinary Medicine (FDA/CVM)
Barry Hooberman

1. Risk Based Inspectional Priorities. CVM is attempting to develop a model to inform management in the allocation of inspectional resources. A particular challenge is to rank relative risks not just within, but also across surveillance and compliance programs. The programs include medicated feeds, drug residues, BSE, feed contaminants, and animal drug GMPs. How much resources should go to BSE, how much to residues, how much to GMPs, etc.

2. Antimicrobial resistance. CVM continues to review new animal drug antimicrobials under a qualitative risk assessment framework. CVM also conducts resistance surveillance under the National Antimicrobial Resistance Monitoring System (NARMS) program, which has 3 "arms" – human isolates collected by CDC, animal slaughterhouse isolates collected by USDA, and retail meat isolates collected by CVM.

3. Animal Feed Safety System. CVM is developing a relative risk ranking model to inform management in determining the best approaches to controlling hazards in animal feed. A daunting challenge is trying to put chemical and microbial risks on the same scale.

4. Biotechnology - Cloning. The animal cloning risk assessment has not been approved for release. Currently USDA/APHIS and USDA/FSIS are reviewing the risk assessment.

5. Biotechnology – Transgenic Animals. CVM is working on a new drug review paradigm for reviewing transgenic animals under the New Animal Drug regulations. The new paradigm will be risk-based and address food, feed, animal, and environmental safety. The current review is on a growth promoter-enhanced salmon.

6. Aquaculture. Completed a database and risk tool with a contractor that addresses the use of drugs in foreign aquaculture. The primary users will be regulators examining imported seafood.

7. Hormones in Beef. Gregg Claycamp and other FDA personnel attended a WTO meeting in early October for discussions on EU sanctions in response to the EU ban on beef treated with hormones. Dr. Claycamp's role is centered on the EU's use of risk assessment in supporting their claim that hormones used in US beef pose a food safety risk to consumers (the famous precautionary principle).

Joint Institute for Food Safety and Applied Nutrition (JIFSAN)
Wes Long

1. Local (Washington DC) SRA Chapter. There are about 140 members. Wes' term on the executive board is ending in December, 2006. This is a plug to recruit executive board members. There are several positions, besides Wes' open on the board: membership counselor; student counselor; program chair, who then becomes chair; treasurer. Executive board members have many benefits; e.g., they can influence how available chapter money can be spent.
2. Risk Analysis Course for Food Defense. The University of Maryland has received a grant from USDA/CSREES to develop a Risk Analysis course for Food Defense. The long term goal is to integrate risk analysis and food defense-based techniques into an undergraduate course.

United States Department of Agriculture
Animal and Plant Health Inspection Service (USDA/APHIS)
David Oryang

1. APHIS continues to streamline its regulatory process. APHIS is establishing regulatory and SPS priorities, promulgating broader rules, streamlining its processes, utilizing information technology and adding analytical resources to expedite decision making related to import requests. The idea is to have broad based rule making rather than country by country, product by product, and disease specific rules. APHIS wants to do RAs that will look at a specific product from any country, and determine the mitigations that need to be put in place to ensure acceptable levels of risk. For example, APHIS is using risk assessment to evaluate the importation of beef from anywhere (sourced in countries of varying prevalence/disease status) and identify mitigations (against FMD virus, BSE agent) necessary to reduce the risk to acceptable levels.
   APHIS is also working on developing rules based on regional and commodity type classifications (e.g., citrus fruits from different regions, mangoes from Asia), as well as pest/disease type classifications (e.g. arthropods, fungus). In this effort, using risk assessment, APHIS will identify mitigations to deal with these

various classes of pests, and categories of commodities from various regions. The Center for Plant Health Science and Technology (CPHST) in Raleigh, NC is doing classification work to develop mitigation matrices for pest and commodity complexes of plants.
Efforts are moving forward in the plant and animal health areas to streamline APHIS risk assessment and regulatory processes to allow trade of safe food and agricultural products.

2. Biotechnology Regulatory Services.
APHIS Biotechnology Regulatory Services (BRS) protects America's agriculture and environment using a dynamic and science-based regulatory framework that allows for the safe development and use of genetically engineered organisms.
a. APHIS has developed a spatial and temporal model of seed and pollen mediated gene transfer via wind. This model can be used to determine the magnitude, extent, speed, and impact of movement/spread of genes, from intentional use sites, into the environment. The model is being applied to study the impacts of deregulating glyphosate tolerant creeping bentgrass. The model will be released for review next year.
b. Genetically engineered rice in the food supply. On August 18, USDA Secretary Johanns announced that USDA and the U.S. Food and Drug Administration were notified by Bayer Crop Science on July 31, that the company detected trace amounts of regulated genetically engineered rice in samples taken from commercial long grain rice. Both agencies reviewed the available scientific data, and based on that data concluded that there are no human health, food safety or environmental concerns associated with this GE rice. However, it did get into other deregulated strains of rice, and has caused trading partners to ban all shipments of the contaminated rice varieties.

3. Avian Influenza.
The Department of Interior (DOI), USDA and a broad array of state, local and non-government partners are conducting expanded capture, sampling and testing programs to detect the highly pathogenic H5N1 avian influenza virus or other HPAI viruses in North American migratory birds. [It was suggested the IRAC invite someone from the Department of Interior to give a seminar on their avian influenza activities].

The U.S. Fish and Wildlife Service and U.S. Geological Survey work with federal, state and local partners to monitor and test migratory birds in a comprehensive program that will provide an early warning to the agriculture, public health, and wildlife communities if migratory birds are found infected with the Asian strain of H5N1 or other highly pathogenic avian influenza (http://www.doi.gov/issues/avianflu.html).

4. Surveillance.
   APHIS is making several efforts to improve surveillance on a scientific basis. There is considerable difficulty developing/setting acceptable thresholds of disease in plants/animals. Determining a sample size in a survey requires a threshold prevalence level to be set. The problem is what prevalence levels does surveillance need to detect? FDA/CVM has a similar problem with antimicrobial resistance.

5. Spread models.
   a. A spread model for foot and mouth disease - the North American Animal Disease Spread Model (NAADSM version 3.0.79, June 1, 2006) - has been developed by the US and Canada. Model can be accessed at http://www.naadsm.org/
   b. An interagency work group is working with the Canadians on a spread model for Avian Influenza. They are looking at what would happen if avian influenza gets into the food supply. Other groups should also be involved, like the Occupational Safety and Health Administration (OSHA).
   c. There was much discussion among the IRAC representatives on having an IRAC-sponsored symposium on Avian Influenza Risk Assessments, possibly in March, and have different people talk about their own models.

6. BSE.
   Since the RAC meeting in June, Canada has had three more BSE cases (Confirmed July 3, July 13, Aug 23); Japan has had several cases, and there have been no more cases in U.S.

Agricultural Research Service/Eastern Region Research Center (USDA/ARS/ERRC)
Andy Hwang

1. ARS-USDA is signing an MOU with the University of Tasmania and the Australian Food Safety Center of Excellence (AFSCE) to continue the Combase program (http://www.combase.cc/). Dr. Mark Tamplin, a former representative for ERRC-ARS-USDA in the program, is now serving as the director of AFSCE.

2. Dr. Carl Schroeder, Risk Assessment Division, OPHS-FSIS-USDA, visited the Microbial Food Safety Research Unit, ERRC-ARS-USDA on August 1, 2006. He presented a seminar about the Risk Assessment Division and the work the division performed. Both sides have agreed to convene quarterly conference calls to identify research needs and strengthen collaboration.

3. The Food Safety Intervention Technology Research Unit, ERRC-ARS-USDA, Wyndmoor, PA, is recruiting two RESEARCH FOOD TECHNOLOGISTS (GS 11-13). Research focuses for the positions are to develop intervention

technologies for vegetable/fruit, and liquid egg. Announcements for both positions can be found at http://jobsearch.usajobs.opm.gov/a9ag.asp.

Economic Research Service (USDA/ERS)
Tanya Roberts

1. Paul Frenzen published a cost estimate of enterotoxigenic *E. coli* in the *Journal of Food Protection*. The new cost estimates are on the ERS website in the cost calculator.

2. An 8-hour pre-major conference at the American Agricultural Economics Association, *New Food Safety Incentives and Regulatory, Technological, and Organizational Innovations*, occurred on July 22, 2006. The slides for all the presentations are posted on AAEA's food safety and nutrition section website: www.fsn-aaea.org.

3. ERS has a job opening for an economist – "JOE" – through American Economics Association. The closing date is October 31, 2006, but if it is unfilled, the job for a food safety economist will open again. Contact Jay Variyam for further information at jvariyam@ers.usda.gov.

4. Fred Kuchler is working on BSE impact on hotdog market. The work is under review.

5. USDA's Agricultural Outlook Forum, March 1-2, 2007 at Gateway Marriott, Crystal City (near Reagan National airport) will feature a food safety session on the afternoon of March 2. The session is titled, **Public and Private Innovations to Control Foodborne Pathogens,** and has three speakers**:**

Continuous food safety innovation as a management strategy: public perspective - Daniel Engeljohn, FSIS/USDA

Continuous food safety innovation as a management strategy: private perspective - Mike Robach, Vice President, Cargill Corporate Food Safety

Lessons from Sweden's control of Salmonella and Campylobacter in broilers - Johan Lindblad, The Swedish Poultry Meat Association

For the last decade, food safety has been a major public policy and health issue. Both industry and government are focusing on how to prevent pathogen contamination of the food supply chain, which causes 5,000 U.S. deaths each year from acute foodborne illness and an unknown number of complications, such as arthritis and paralysis. A major issue for public policy and private strategy is choosing a target level of safety, as well as how to set and enforce regulations, insurance, and supply contracts to achieve compliance. Industry innovators are finding new strategies to control pathogens in the food supply chain. New economic incentives in regulatory

policies and a movement away from command and control are demonstrated by the evolution of HACCP as a U.S. and international regulatory program. FSIS (as well as AMS in its School Lunch contracts) has made program changes as new scientific tests and control procedures have been invented, and FSIS has developed new policies and enforcement actions that increase incentives for food safety compliance. In Sweden, poultry cooperatives and the government jointly developed and implemented programs to achieve control of all *Salmonella* serotypes in commercial broilers. In 1984, Swedish indemnity payments stopped and were replaced by private insurance; a *Salmonella*-control success that continues today. Each speaker has 25 minutes with 5 minutes for questions.

6. At the *Listeria* workshop in Denver the last week of September, John Sofos gathered members of industry, consumer groups, and academia to discuss control options for RTE meat and poultry. The goal is to develop and evaluate control options to be published as a series of papers. The project is funded by a CSREES grant.

Food Safety Inspection Service (USDA/FSIS)
Kerry Dearfield

1. Omics.
   FSIS will continue its "omics" efforts. The National Academy of Science is interested in this topic of applying omics technologies to food borne pathogen detection and development of information for risk assessment. There is much interest, including by the Society for Toxicology, in the role of genomics in microbial source tracking and genomics tracking.

2. Chemical Risk Assessment.
   At FSIS the current main focus of risk assessment is on microbial risk assessment; chemical risk assessment has not been recently emphasized. However, FSIS is now looking at its National Residue Program (NRP) to possibly rework and thus enhance its capabilities for chemical risk assessment. The National Residue Program is looking at animal drugs, environmental contaminants, and pesticides in the food commodities FSIS regulates. FSIS is talking with FDA/CVM as a partner to examine the NRP process. One consideration FSIS is use of new technologies and how to bring them to bear on NRP issues.

   There was much discussion among the IRAC representatives, as there has always been interest in incorporating chemical risk assessment as it pertains to food safety into the IRAC. The possibility of having a mini symposium and inviting some chemical risk assessors to speak during the December IRAC quarterly meeting was suggested.

3. CODEX Committees.
   There is a new CODEX committee for food contaminants, the Codex Committee on Contaminants in Food (CCCF). It was split off from the pre-existing Codex Committee on Food Additives and Contaminants (CCFAC). Nega Beru (FDA/CFSAN) will be the U.S. Delegate to the CCCF and Kerry Dearfield will be the Alternate Delegate to the CCCF. The other half of the previous CCFAC is the other new CODEX committee, the Codex Committee on Food Additives. Issues from both these CODEX committees will be of continuing interest to the IRAC as well as the existing Codex Committee on Food Hygiene, with Bob Buchanan as the U.S. Delegate. The IRAC is therefore well represented on these committees.

Food Safety Inspection Service Office of Public Health/Risk Assessment Division (USDA/FSIS/OPHS/RAD)
Janell Kause

1. International Visitors
   FSIS has had several international visitors recently seeking information on risk assessment: Vietnamese; Chinese, and Korean. They are interested in how we do risk assessments, and how they are used to inform regulation and inspections, and use in multivariant analysis.
2. Avian Influenza Risk Assessment.
   FSIS is leading the development of an interagency food safety risk assessment for avian influenza (AI). This quantitative risk assessment for AI associated with poultry, eggs and egg products is being developed by risk analysts at USDA/FSIS, DHHS/FDA, and USDA/APHIS. This risk assessment will be completed in December 2006. It will then be formally peer reviewed according to OMB guidelines for peer review and further revised based on stakeholder input.

Office of Risk Assessment and Cost Benefit Analysis (USDA/ORACBA)
Michael McElvaine

1. Employee Information.
   The office is currently under-staffed. An agricultural economist is coming on board in December. ORACBA is looking to hire a scientist sometime after January. They will notify RAC members when the position is posted.

2. Activities.
   Jim Schaub continues to work on methyl bromide policy issues.

   Mark Powell has been working with the JEMRA consultation on *E. coli* as well as working with APHIS on recent BSE prevalence models.

Michael McElvaine is on a work group planning a workshop on Nutritional Risk Assessment February 28-March 1, 2007. The announcement is on the IRAC website on the JIFSAN Clearinghouse.

3. ORACBA mailing list.
   Get on the ORCBA mailing list to learn about local events. Jennifer Callahan is the coordinator and can be contacted at: JCallahan@oce.usda.gov or at 202-729-8024.

4. Agricultural Outlook Conference.
   In addition to Tanya's comments, the Agricultural Outlook Conference has been going on for 20 years and is sponsored by Chief Economist in USDA/ORACBA. Jennifer Callahan is the lead logistician for the conference.

Mini symposium: BSE/TSE Risk Assessment-Related Activities of the Different IRAC Member Agencies

- APHIS Update on Risk Assessment Activities of BSE by Lisa Ferguson, DVM, USDA/APHIS
- Update on BSE Activities at CVM by Burt Pritchett, DVM, FDA/CVM
- An Update on CFSAN's TSE Activities by Rebecca Buckner, FDA/CFSAN
- FSIS Update on Risk Assessment of BSE by Chuanfa Guo, USDA/FSIS

Policy Council Meeting: 2:15 – 3:30 pm

IRAC work group updates

1. "Omics"

It was decided to put this work group on the back burner as the person who was supposed to lead the group has left the area. FSIS is still working on this topic with FDA/CDER and USDA/ARS, as well as people outside the government. There is still much activity and interest on this topic, looking at new technologies and microbial food pathogens for monitoring and risk assessment purposes.

2. Data Utility

A discussion paper based on the symposium at the annual SRA meeting December 2005 is being developed.

3. Nutrition Risk Assessment

A workshop is being planned for February 28 – March 1, 2007 at the National Academies building in Washington DC in collaboration with IOM Food Forum and ILSI, ASPE. The title of the workshop is: "Nutritional Risk Assessment: Bridging Perspectives, Sharing Methodologies, Identifying Data Challenges". The workshop will serve as a forum for experts on various disciplines to discuss the use of risk assessment tools to inform dietary and nutritional

recommendations. It will address use of risk assessment to evaluate standards for adequate nutrient intake and to explore the relationship of diet and nutrition to chronic disease risk. The final objective of this workshop is to identify next steps necessary to advance in these areas. The workshop will cover four areas: interface between RA and Nutrition, Uses of Nutritional RA, Evidence-based methods in nutrition, and Research gaps/needs. This may be the first of several workshops depending on the reactions to the meeting. This will be a substantial meeting attracting leaders in RA and Nutrition. The announcement can be found on the RAC web site on the JIFSAN Clearinghouse.

4. Microbiological Criteria

A paper on "Determining the microbiological criteria for lot rejection from the performance objective or food safety objective" developed by the work group was published in August in the International Journal of Food Microbiology **10**:263-267, 2006.

Discussion of possible workshop/symposium on "Risk Assessment Control Options and Economic Net Benefits"

Tanya Roberts suggested having this meeting, initially possibly as a piggy back onto a future Food Safety Research Consortium meeting on economics and food safety. However, after some discussion it was decided to have a half day mini symposium either during the summer or fall IRAC quarterly meeting. A planning committee was formed consisting of: Tanya Roberts, Richard Williams, Kerry Dearfield, Cristina McLaughlin, and Marianne Miliotis. Richard was going to distribute his paper on combining risk and economic analyses as background. Al McGartland from EPA was recommended as a possible speaker. There was also some discussion as to whether the IRAC might want to consider this a one-day symposium and co-sponsor with the local SRA, SOT, *etc.* groups.

Local chapter SRA monies are also available and they are interested. We could put in a proposal to them. Tanya will draft a description of the proposed meeting and send it to the IRAC for comments.

FY07 Annual Plan

The IRAC will continue holding technical quarterly meetings, where the technical representatives of the member agencies exchange risk assessment and risk assessment –related research information. The semi annual Policy Council meetings will also continue.

Presentations at the IRAC quarterly meetings will also continue:

i. Continue presentations by agency representatives on current risk assessments.
ii. Continue presentations by member agencies on issues related to risk assessment.
iii. Presentations by other organizations, e.g., ILSI, academia.

IRAC Work Groups

The following work groups will continue their efforts:

- Nutrition Risk Assessment
  - See discussion above
- Data Utility
  - See discussion above
- Data Gaps Analysis
  - Add new data gaps to the Data Gaps list as they are identified.
  - Request and add data gaps provided by risk ranking projects
  - Update the list for data gaps that have been or are being addressed.
  - Identify effective means to publicize the list and promote research that address the data gaps.
  - Develop criteria and methods for ranking the data gaps and research priority.

Workshops/Meetings/Mini symposia

- Host or co-host at least two public meetings
  - Nutritional Risk Assessment – see above:
  - Risk Assessment Control Options and Economic Net Benefits in the summer or fall (see meeting minutes ex 10/4/2006)
  - Possibly a one-day or half day symposium/workshop on avian influenza risk assessments (AIRA). Besides the effort led by USDA/FSIS, there are several other groups conducting AIRAs. Kerry Dearfield recommended an IRAC-sponsored symposium having the different AIRA groups come and present. The objective of the workshop is to get everyone on board with the multitude of approaches, and to collect outside thoughts. Janell will write a short description.

- Hold mini symposia during the IRAC quarterly meetings
    - A mini symposium on chemical risk assessments during an IRAC quarterly meeting
    - Also, pesticide residues are an issue. A mini symposium during an IRAC quarterly meeting. Barry Hooberman could give a presentation; the National Residue program people can talk, as well as Henry Kim (FDA/CFSAN) and the EPA pesticide people. This will emphasize how people across agencies work together.

In attendance (* participated by phone)

Bob Buchanan, FDA/CFSAN
Kerry Dearfield, USDA/FSIS
*Sharon Edelson Mammel, FDA/CFSAN
Richard Fite, USDA/APHIS
Chuanfua Guo, USDA/FSIS
Kathy Hollinger, FDA/OWH
Barry Hooberman, FDA/CVM
*Andy Hwang, USDA/ARS/ERRC
Janell Kause, USDA/FSIS/RAD
Wes Long, FDA/CFSAN
Michael McElvaine, USDA/ORACBA
Cristina McLaughlin, FDA/CFSAN
Marianne Miliotis, FDA/CFSAN
David Oryang, USDA/APHIS
*Tanya Roberts, USDA/ERS
*Angela Ruple, NOAA Fisheries Service
*Steven Schaub, EPA/OW
*Brandolyn Thran, DOD/CHPPM
Richard Whiting, FDA/CFSAN
Richard Williams, FDA/CFSAN