Joint SRA RO Project Plan:

Understanding Perceptions of Benefits and Risks Posed by Microbiota of Milks

Phases: I. Webinar Series; II. Workshop; and III. Round Table Panel Symposium

Draft of 16 June 2017

Peg Coleman
Upstate NY SRA

Heather Lynch
New England SRA

Steve Corin
Australia/New Zealand SRA
Project Description

Three regional organizations (ROs) of the Society for Risk Analysis (SRA) are again partnering in 2017 to address a controversial topic of global significance: Understanding Perceptions and Evidence of Benefits and Risks of Consuming Fresh Unprocessed Milk. The partnering ROs organized a unique risk analysis project beginning with a webinar series on new scientific evidence and culminating in a workshop and a round table panel discussion at the 2017 SRA annual meeting (December 10-14, Arlington, VA).

The project is ambitious and interdisciplinary, seeking to incorporate inputs not just from researchers leading the ‘microbiome revolution’, but also practitioners of risk assessment, risk communication, risk management, and risk perception fields. Inviting regulators, scientific experts, and risk practitioners from Australia, New Zealand, and the UK, in addition to the US, is important to increase the value of the project to the partnering ROs and the international community.

Regulatory positions around the world range from ‘raw drinking milk is safe for healthy adults’ in the UK (Food Standards Agency (FSA), 2015) to prohibitions on the sale of raw milk in Australia and Canada. New Zealand permits sale of raw milk via home delivery or from licensed farm stores, similar to some state-licensed dairies in the US. Note that ten US states (AZ, CA, CT, ID, ME, NH, NM, PA, SC, WA) currently permit sale of fresh unprocessed milk from licensed dairies in retail markets, while others (including IL, MO, NE, NY, OK, SD, TX, VT) permit sale from farm stores of licensed dairies or via home delivery, and seven states (DE, IA, LA, MT, NJ, NV, RI) prohibit sale of raw milk (http://www.farmtoconsumer.org/raw-milk-nation-interactive-map/).

In order to provide appropriate context for analytic-deliberative process on this controversial, sometimes fanatical, topic, diverse experts are needed to describe the full body of evidence and provide a necessary framework for identifying and overcoming the barriers to respectful collaborative public discourse as science advances. We commend the U.S. Food and Drug Administration (FDA) for developing a relevant user’s guide for communicating benefits and risks using objective, unbiased evidence-based processes (FDA, 2011), yet no application of this guide to fresh unprocessed and pasteurized milks appear to have been undertaken to date.

Current microbial risk communications about ‘raw’ milk lack transparency about the supporting scientific evidence, impede civil discourse, and mislead consumers. Clearly, barriers to objective analysis and deliberation include fear, risk-aversion bias, and reliance on outdated paradigms that exclude significant advances in scientific knowledge about the human ‘superorganism’ (the ecosystems of human and microbiome cells) and food microbiota that influence health and disease. Past debates sponsored by organizations other than SRA have fueled rather than resolved conflict because debaters reasoned from selected studies and not the full body of scientific evidence. Lack of knowledge of the microbiota of milks, ignored even in the most recent debates, is a major barrier to full exercise of analytic-deliberative process and future development of reasoned, science- or evidenced-based regulations, policies, and communications about benefits and risks of consuming fresh unprocessed (certified raw) milk.
The partnering ROs will invite the membership of SRA and other stakeholders (including regulators, public health officials, medical professionals, dairy farmers and cooperatives, agricultural researchers, and consumers) to participate in the three-phase project (webinar series, workshop, and round table panel symposium) in order to:

- engage with experts who may hold diverse positions on safety of consuming fresh unprocessed milk;
- begin the exercise of formal analytic-deliberative process necessary for developing a shared understanding of the full body of evidence, especially studies documenting effects of the milk microbiota; and
- promote transparent and objective communications about benefits and risks of consuming fresh unprocessed and pasteurized milks, with attendant uncertainty.

The major goals of the project are to:

- build a shared understanding of microbial benefits and risks for milk with stakeholders; and
- facilitate a paradigm shift for an expanded framework for microbial benefit-risk assessment that incorporates the ‘superorganism’, food microbiota, and their roles in contributing to health and disease.

**Partnering ROs** (and contact persons) include:

- **Upstate NY SRA**, http://sra.org/upstateny (Peg Coleman, peg@colemanscientific.org);
- **New England SRA**, http://sra.org/sra-ne (Heather Lynch, hLynch@gradientcorp.com); and
- **Australia/New Zealand SRA**, http://www.sraanz.org.nz/ (Steve Corin, Steve.Corin@epa.govt.nz).

**Co-facilitators for workshop and round table panel symposium** are:

- **Warner North**, SRA Fellow and Past-President, San Francisco, CA, USA (http://www.northworks.net/; northworks@mindspring.com); and

**Background**

The safety and health benefits associated with fresh unprocessed milk (certified raw milk in the US or raw drinking milk in the UK) merit consideration by SRA risk analysis practitioners and stakeholders. In the past (FDA, 2003), risk and attendant uncertainty, but not benefits, were estimated for pasteurized and ‘pre-pasteurized’ milks (not fresh unprocessed milk from licensed dairies intended for consumption as certified raw milk). As scientific knowledge of the impacts of the human microbiome on health and disease continues to advance, the next generation (NextGen) microbial risk assessments cannot continue to exclude the microbiota. The partnering SRA ROs organized this project to include a webinar series to provide necessary context on the microbiota and the history of the continuing ‘milk wars’ for meaningful exercise of analytic-deliberative process in a workshop and round table panel symposium at the SRA annual meeting in 2017.

Three types of positions on safety of fresh unprocessed milk have been articulated:
• certified raw milk from licensed dairies is safe and provides health benefits to consumers;
• raw drinking milk from government-licensed dairies in the UK is safe for healthy adults; and
• all raw milk is poison (innately hazardous) and should not be offered for sale or consumption.

A number of public ‘debates’ in recent years designed by organizations other than SRA have failed to address one simple problem: both sides of the ‘debate’ overstate their confidence that science supports their position, and often imply that no science or only discredited science supports their opponents’ position.

‘Debates’ sponsored by organizations (links to podcasts) other than SRA, including

• International Association of Food Protection (http://www.youtube.com/watch?v=Sin8xrMRHXE)
• Guelph University (http://www.youtu.be/eRgeLWCwck)
• Harvard Food Law Society (http://www.youtube.com/watch?v=iLRdihFig6gw),

increased awareness of some aspects of the controversies, but were not designed to resolve differences of opinion, belief, and perception about benefits and risks. One debater from a university recently closed his anti-
raw milk/pro-pasteurization arguments with the opinion that ‘risk associated with raw milk relative to ‘perceived’ benefits is too high [to merit removing the prohibition on sale of raw milk to Canadian consumers who want to buy and consume it] while pasteurized milk is available’. Some debaters believed that because milk can contain pathogens that it is inherently dangerous without pasteurization. Exercise of analytic-deliberative process will differentiate assumptions, beliefs, and perceptions that are based on selected studies, as well as open up deliberations based on the full body of scientific evidence.

Key aspects of risk analysis were missing from these debates. Uncertainty associated with the body of scientific evidence and the risk estimates was not addressed. Neither was the influence of assumptions, opinions, and policy choices (e.g., exclusive use of non-threshold, linear low-dose models for human dose-response relationships) on risk estimates addressed fully and transparently. The debates did not inform stakeholders that the presence of pathogens in milk is insufficient to predict the likelihood or severity of illness. Reality is that many foods, including deli meats, fruits and vegetables, and ice cream prepared from pasteurized milk, can contain pathogens, and consumption is not prohibited or restricted. Just as the Paracelsus principle is applied in toxicology and chemical risk assessment, ‘the dose makes the poison’ also applies to interactions of the human superorganism, its gut microbiota, and ingested pathogens.

Further, the debates did not mention that no studies formally assessed risk of pasteurized and fresh unprocessed (certified raw) milk as side-by-side, evidence-based comparisons, with attendant uncertainties. One study that compared unpasteurized (pre-pasteurized, not certified raw milk from licensed dairies) and pasteurized milk estimated similar magnitudes of risk of listeriosis, and doses of Listeria monocytogenes below 3,100 bacteria were not associated with illnesses in risk simulations (FDA, 2003, 2008). More recent epidemiologic evidence evaluated by FDA (Pouillot et al., 2016) documents the lack of illnesses consistent with thresholds for listeriosis from highly contaminated ice cream in the general population of consumers (including children and the elderly) who likely consumed $10^9$ to $10^{10}$ pathogens, while the only illnesses documented were in highly susceptible immunocompromised patients hospitalized with other underlying diseases who consumed doses more than 100 times lower ($\sim 10^7$ pathogens). The dense and diverse milk microbiota may offer another threshold mechanism that is inconsistent with the overly conservative assumption that ingestion of a single Listeria monocytogenes bacterium (and other pathogens) causes illness in healthy humans.
By proposing a three-phase project that links and builds on dialogue at the webinar series, workshop, and round table symposium, the ROs seek to provide more extensive opportunities for beginning formal analytic-deliberative process with stakeholders that past debates have not provided.

**Phase I. Advancing the Science Webinar Series: Microbiota Informing Next Generation (NextGen) Risks and Benefits**

The partnering ROs organized a series of 4 webinar sessions, beginning in January, 2017, to advance the science to support further analysis of novel data on the microbiota informing NextGen risks and benefits. Webinars are provided free to SRA members and non-members, though podcast recordings of the webinars will only be available to SRA members after each webinar.

The partnering SRA ROs worked with the SRA Education Committee (Drs. Robin Dillon-Merrill and Jennifer Kuzma), the SRA Secretariat (Brett Burk), and the speakers on scheduling the webinars from January to July, 2017. The confirmed webinar speakers are listed below with their affiliations, titles or topics, abstracts (if available), and confirmed dates and times for their webinars in various time zones of interest.

1. **Rodney Dietert** (Cornell University Professor of Immunotoxicology; rrd1@cornell.edu)
   
   **Protecting the Human Superorganism**: Human safety evaluation and risk assessment are predicated on modeling, evaluating, estimating, and then responding to the likelihood of adverse outcomes from exposure to environmental chemicals, food, physical agents (e.g., radiation), pathogens, and drugs. Fundamental to the process has been the assumption that the target organism being protected via the applications of safety evaluation and risk assessment is the mammalian human. Until recently, little-to-no attention was directed toward the role of thousands of non-mammalian, human-inhabiting species collectively known as the human microbiome. Yet, humans in their normal, healthiest state are by some measures a majority-microbial superorganism with a slight majority of microbial to mammalian cells and an even larger disparity among genes. Additionally, because the microbiome resides at the boundary between humans and their environment, it serves as a gatekeeper engaging microbial pathogens, chemicals and drugs before they reach human mammalian cells. Protection of the newly-defined human superorganism requires a re-thinking of what has been a largely mammalian-centric environmental health focus. This webinar presentation considers how microbiome status drives human health risk and needs to be a centerpiece of NextGen risk assessment.
   
   **Tuesday Jan 24, 4 pm EST/Wednesday, Jan 25: 8 am AEDT (Sydney); 10 am NZDT (Wellington).**

2. **Michelle McGuire** (Washington State University Associate Professor of Nutrition; smcguire@wsu.edu)
   
   **Human Milk: Mother Nature’s Prototypical Probiotic Food**: Human milk is inarguably the only food "designed" to be consumed exclusively by humans - providing all the essential nutrients (and other bioactive compounds and constituents) needed for growth and development of the human infant. However, our understanding of human milk composition and its impact on host and microbial health is far from complete. For instance, until recent advances in instrumentation allowing the
detection and identification of difficult-to-culture bacteria, common dogma was that human milk was sterile unless produced by an infected mammary gland or contaminated after expression. Researchers now know, however, that (like bovine milk) human milk contains diverse populations of bacteria. This webinar will briefly describe what is currently known about variation in the human milk microbiome as well as relationships among maternal diet, maternal health, milk nutrient content, and the milk microbiome. In addition, we will introduce an ongoing cross-cutting study funded by the Integrated National Science Foundation Support Promoting Interdisciplinary Research and Education (INSPIRE) funding mechanism designed to help us better understand what is normal in terms of milk microbes in various locations worldwide. The importance of cooperation and interdisciplinary discussion around methods and vocabulary will be discussed. Finally, a framework for considering what work is needed to link the human milk microbiome to human health and disease will be presented.

*Tues March 21, 1 pm PDT/4 pm EDT; Wed March 22, 7 am AEDT (Sydney); 9 am NZDT (Wellington)*

3. **Mark McGuire** (University of Idaho, Asso. Dean, Research & Director of ID Agricultural Experiment Station; mmcguire@uidaho.edu);

   **Bovine Milk Microbiota**: Through a variety of dairy products including fluid milk, cheese, yogurt, ice cream, and butter, bovine milk provides myriad essential nutrients to the human consumer. The dairy industry has great desire to produce the highest quality milk possible. Of particular concern in this regard are pathogenic bacteria that might lead to foodborne illness. Long-considered sterile unless produced by infected cows or contaminated via milking equipment, any milk containing bacteria has historically been considered a health risk to the consumer. However, the advent of culture-independent assessment of bacteria has confirmed that milk is not sterile, even when cows are healthy and the milking equipment is properly cleaned. Recent research sequencing 16S rRNA genes has clearly demonstrated that, like human milk, bovine milk is a rich source of a variety of different bacteria. Evidence also exists that the bacterial communities in milk can differ among farms, suggesting that local environments may contribute to the relative abundance of particular bacteria. Some studies report microbiological indicators of milk quality and safety, including prevalence and levels of pathogens in bulk tank milk samples that are important inputs to microbial risk assessments. In conclusion, cow’s milk contains bacteria which may have no effect on consumer health, may be deleterious, or may impart health benefits (less studied). Additional interdisciplinary research is critically needed to understand the balance of risks and benefits. *(Tues May 23, 5:30 pm EDT /2:30 pm PDT; Wed May 24, 7:30 am AEST (Sydney); 9:30 am NZST (Wellington).*

4. **Warner North** (SRA Fellow, principal NorthWorks, northworks@mindspring.com)

   **TBD** (September/October, 2017).

In addition to organizing the webinar series, the partnering SRA ROs will offer various local sites where participants can convene to view the webinars together and engage in dialogue with the presenters and others in the webinar audience.

A perspective article will be prepared for submittal to the SRA journal *Risk Analysis* after completion of the workshop and round table panel symposium.
### Phase II. Workshop

The following draft Workshop Proposal was submitted for comment to moderators, invited speakers, and Microbial Risk Analysis and Risk Communication Specialty Groups on May 16 prior to revision and online submission.

<table>
<thead>
<tr>
<th>Proposal Form for SRA Workshops</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Workshop title</strong></td>
</tr>
<tr>
<td>Understanding Perceptions of Benefits and Risks Posed by Microbiota of Milks</td>
</tr>
<tr>
<td><strong>2 Organizer information</strong></td>
</tr>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Affiliation</td>
</tr>
<tr>
<td>Phone</td>
</tr>
<tr>
<td>Fax</td>
</tr>
<tr>
<td>Email</td>
</tr>
<tr>
<td><strong>3 Registration fee</strong></td>
</tr>
<tr>
<td>$350</td>
</tr>
<tr>
<td><strong>4 Duration, preferred time, and day</strong></td>
</tr>
<tr>
<td>Full day <em>X</em> Half day <strong>/preference: a.m. or p.m. <em>X</em> Sunday</strong> Thursday __ Either___</td>
</tr>
<tr>
<td><strong>5 Target audience (who should attend?)</strong></td>
</tr>
<tr>
<td>- Practitioners and stakeholders interested in microbial benefits and risks, evidence-based communications, and analytic-deliberative processes with stakeholders.</td>
</tr>
<tr>
<td>- Stakeholders whose positions differ from conservative regulators positions that are too often ridiculed without objective evaluation of the validity of supporting evidence.</td>
</tr>
<tr>
<td>- Decision makers concerned about fairness and transparency of communications about benefits and risks of fresh unprocessed and pasteurized milks using objective evidence-based procedures.</td>
</tr>
<tr>
<td><strong>6 Attendee limit</strong></td>
</tr>
<tr>
<td>40</td>
</tr>
<tr>
<td><strong>7 Planned format (e.g., introductory lectures, methods tutorial with exercises, general discussion?)</strong></td>
</tr>
<tr>
<td>- Introductory lectures to supply context for available body of evidence on benefits and risks associated with milks; microbial ecology and predictive microbiology of milks; past QMRAs; and material from webinar series.</td>
</tr>
<tr>
<td>- Panel discussion with webinar speakers on path forward to continue analytic-deliberative process for controversial issues around the microbiota of milks.</td>
</tr>
<tr>
<td><strong>8 Planned handouts (e.g., notebook of presentation slide and case study, references on CD?)</strong></td>
</tr>
<tr>
<td>To be developed</td>
</tr>
<tr>
<td><strong>9 Other sponsors (e.g., will another organization be covering expenses for certain instructors?)</strong></td>
</tr>
</tbody>
</table>
## Proposal Form for SRA Workshops

<table>
<thead>
<tr>
<th>Australia/New Zealand SRA; Coleman Scientific Consulting; Risk Communication Specialty Group; New Zealand EPA; NorthWorks; Upstate NY SRA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>10</strong> (Optional) Workshop web page URL (e.g., if established, to provide further details as desired)</td>
</tr>
<tr>
<td><a href="http://sra.org/upstateny">http://sra.org/upstateny</a></td>
</tr>
<tr>
<td><strong>11</strong> If you have discussed or coordinated this workshop with an SRA Specialty Group, please indicate which one(s)](50x50x50x50x50)</td>
</tr>
<tr>
<td>Risk Communication Specialty Group</td>
</tr>
<tr>
<td><strong>12</strong> Workshop Description (250 words or less, to be used for the SRA broadcast emails and annual meeting program)</td>
</tr>
</tbody>
</table>
| Join SRA Fellow Warner North and New Zealand EPA scientist Stephen Cobb who will facilitate the workshop and guide initial efforts to exercise analytic-deliberative process with participants and invited speakers. The facilitators will seek to provide a respectful meeting place to air competing views of the body of evidence supporting divergent positions about the safety of milks around the globe. The deliberations of participants may identify points of convergence, researchable questions, and communication and management options to balance benefits and risks.  
Veteran predictive microbiologists and microbial risk assessors from around the globe (Paul Cook from UK Food Standards Agency; Tom Ross from University of Tasmania, Australia; and Peg Coleman from Upstate NY SRA, US) will present their perspectives of the available risk assessments and data and theory for modeling microbial ecology and predictive microbiology of milks, fresh unprocessed and various pasteurized milks.  
Participants and invited speakers will consider potential applications of the FDA tool described in its 2011 report entitled Communicating Risks and Benefits: An Evidence-Based User's Guide. Representatives from the Risk Communication SG were invited to assist in this portion of the workshop.  
Register for this workshop and contribute to generation of a perspective article to be submitted to Risk Analysis after the workshop. |
| **13** Content overview (e.g., syllabus or outline of proposed workshop, with brief annotation) |
| Three regional organizations (ROs) of the Society for Risk Analysis (SRA) are again partnering in 2017 to address a controversial topic of global significance: Understanding Perceptions and Evidence of Benefits and Risks of Consuming Fresh Unprocessed Milk. The partnering ROs organized a unique risk analysis project beginning with a webinar series on new scientific evidence and culminating in a workshop and a round table panel discussion at the 2017 SRA annual meeting.  
The introductory lectures (Australia, UK, and US perspectives) will include materials to assist the participants with addressing the following questions about benefits and risks associated with milks:  
1. What is known?  
2. What would we want to know to improve model transparency and test validity?  
3. What researchable questions merit consideration for design of model-directed experiments that would reduce uncertainty and bias in future updates of existing risk assessments? |
The four invited presenters from the Advancing the Science webinar series on the microbiota of milks (see http://sra.org/upstateny) will participate in a panel discussion that highlights advances in our knowledge of the microbiota of milks and the human superorganism. Their talks focused on:

1. Protecting the Human Superorganism;
2. The Breast Milk Microbiota;
3. The Bovine Milk Microbiota; and
4. The Continuing Milk Wars.

The facilitators, along with representatives of the Risk Communication SG, will lead exercises with workshop participants to map the space of disagreements about the evidence using the FDA tool described in the 2011 report entitled Communicating Risks and Benefits: An Evidence-Based User’s Guide.

Background Context

Regulatory positions around the world range from ‘raw drinking milk is safe for healthy adults’ in the UK (Food Standards Agency (FSA), 2015) to prohibitions on the sale of raw milk in Australia and Canada. New Zealand permits sale of raw milk via home delivery or from licensed farm stores, similar to some state-licensed dairies in the US. Note that ten US states (AZ, CA, CT, ID, ME, NH, NM, PA, SC, WA) currently permit sale of fresh unprocessed milk from licensed dairies in retail markets, while others (including IL, MO, NE, NY, OK, SD, TX, VT) permit sale from farm stores of licensed dairies or via home delivery, and seven states (DE, IA, LA, MT, NJ, NV, RI) prohibit sale of raw milk (http://www.farmtoconsumer.org/raw-milk-nation-interactive-map/).

The U.S. Food and Drug Administration (FDA) is to be commended for investing resources to develop a relevant user’s guide for communicating benefits and risks using objective, unbiased evidence-based processes (FDA, 2011). To our knowledge, workshop participants will be the first to apply this guide to fresh unprocessed and pasteurized milks. In order to provide appropriate context for analytic-deliberative process on this controversial topic, diverse experts were recruited to describe the full body of evidence and provide a necessary framework for identifying and overcoming the barriers to respectful collaborative public discourse as science advances.

Current microbial risk communications about ‘raw’ milk lack transparency about the supporting scientific evidence, impede civil discourse, and mislead consumers. Clearly, barriers to objective analysis and deliberation include fear, risk-aversion bias, and reliance on outdated paradigms that exclude significant advances in scientific knowledge. In particular, knowledge of the human ‘superorganism’ (the ecosystems of human and microbiome cells) and food microbiota have until now been excluded from public discourse about benefits and risks of milks. Past debates sponsored by organizations other than SRA have fueled rather than resolved conflict because debaters reasoned from selected studies and not the full body of scientific evidence. Lack of knowledge of the microbiota of milks, ignored even in the most recent debates, is a major barrier to full exercise of analytic-deliberative process and future development of reasoned, science- or
Proposal Form for SRA Workshops

evidenced-based regulations, policies, and communications about benefits and risks of consuming fresh unprocessed (certified raw) milk.

The partnering ROs invite the membership of SRA and other stakeholders (including regulators, public health officials, medical professionals, dairy farmers and cooperatives, agricultural researchers, and consumers) to participate in all three phases of the project (webinar series, workshop, and round table panel symposium) in order to:

- engage with experts who may hold diverse positions on benefits and risks of consuming fresh unprocessed and pasteurized milks;
- begin the exercise of formal analytic-deliberative process necessary for developing a shared understanding of the full body of evidence, especially studies documenting effects of the milk microbiota; and
- promote transparent and objective communications about benefits and risks of consuming fresh unprocessed and pasteurized milks, with attendant uncertainty.

The major goals of the project are to:

- build a shared understanding of microbial benefits and risks for milk with stakeholders; and
- facilitate a paradigm shift for an expanded framework for microbial benefit-risk assessment that incorporates the ‘superorganism’, food microbiota, and their roles in contributing to health and disease.

14 Instructor information (all confirmed)

<table>
<thead>
<tr>
<th>1. Name</th>
<th>Tom Ross</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>University of Tasmania</td>
</tr>
<tr>
<td>Brief biosketch</td>
<td>Tom is an Associate Professor in food microbiology whose research involves development of knowledge and models for predictive microbiology (predicting likelihood and magnitude of growth and death of bacteria in foods).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Name</th>
<th>Peg Coleman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Upstate NY SRA, Coleman Scientific Consulting</td>
</tr>
<tr>
<td>Brief biosketch</td>
<td>Peg is a medical microbiologist and microbial risk assessor active in SRA since 1995. Currently as President of Upstate NY SRA, she continued past partnerships with other ROs to develop this joint RO SRA project for 2017.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Name</th>
<th>Paul Cook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>UK Food Standards Agency</td>
</tr>
<tr>
<td>Brief biosketch</td>
<td>Paul earned PhD and post-doc in environmental microbiology and is currently Head of the Microbiological Risk Assessment Branch in the Science, Evidence and Research</td>
</tr>
</tbody>
</table>
## Proposal Form for SRA Workshops

<table>
<thead>
<tr>
<th>4. Name</th>
<th>Rodney Dietert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Cornell University</td>
</tr>
<tr>
<td>Brief biosketch (20-25 words)</td>
<td>Rodney is professor of immunotoxicology and served as President of the Immunotoxicology Specialty Section of SOT. He authored more than 300 scientific papers and a recent book entitled <em>The Human Superorganism: How the Microbiome is Revolutionizing the Pursuit of a Healthy Life</em>.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Name</th>
<th>Michelle McGuire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Washington State University</td>
</tr>
<tr>
<td>Brief biosketch (20-25 words)</td>
<td>Michelle is a human nutrition researcher with expertise in maternal and infant nutrition. This year, she released a book (edited with her husband Mark and another colleague) entitled <em>Prebiotics and Probiotics in Human Milk; Origins and Functions of Milk-Borne Oligosaccharides and Bacteria</em>. She is an active member of the American Society for Nutrition.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Name</th>
<th>Mark McGuire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Idaho University</td>
</tr>
<tr>
<td>Brief biosketch (20-25 words)</td>
<td>Mark is a lactation physiologist with expertise in factors such as nutrition, endocrinology, and bacteria that affect milk synthesis and quality. He is an active member of the American Dairy Science Association, American Society for Nutrition, American Society for Microbiology, and the International Society for Research in Human Milk and Lactation.</td>
</tr>
</tbody>
</table>

Funding will be sought for reimbursement of travel costs and honoraria for invited speakers from SRA Specialty Groups and other sources.

### Phase III. Round Table Panel Symposium

The following draft Roundtable Panel Symposium Proposal was submitted for comment to moderators, invited speakers, and Microbial Risk Analysis and Risk Communication Specialty Groups on May 16 prior to revision and online submission.
Title: Understanding Perceptions of Benefits and Risks Posed by Microbiota of Milks

Organizer: Peg Coleman, Upstate NY SRA/Coleman Scientific Consulting

Moderators:

• SRA Fellow Warner North (northworks@mindspring.com) and
• New Zealand EPA Scientist Stephen Cobb (Stephen.Cobb@epa.govt.nz)

Panelists (alphabetic order):

• Peg Coleman, Upstate NY SRA/Coleman Scientific Consulting (peg@colemanscientific.org)
• Rodney Dietert, Cornell University (rrd1@cornell.edu)
• Mark McGuire, University of Idaho (mmcguire@uidaho.edu)
• Shelley McGuire, University of Washington Pullman (smcguire@wsu.edu)
• Tom Ross, University of Tasmania (tom.ross@utas.edu.au)

Description: SRA Fellow Warner North and New Zealand EPA scientist Stephen Cobb will facilitate the panel discussion and guide initial efforts to exercise analytic-deliberative process with participants and invited speakers. This symposium represents Phase III of a joint Regional Organization project that also included an SRA webinar series and a proposed workshop for the SRA annual meeting. The moderators will summarize the workshop and continue discussions on available risk assessments and data and theory for modeling microbial ecology and predictive microbiology of milks, fresh unprocessed and various pasteurized milks. The following questions will be the focus of dialogue between panelists and the SRA audience.

1. What is known?
2. What would we want to know to improve model transparency and test validity?
3. What researchable questions merit consideration for design of model-directed experiments that would reduce uncertainty and bias in future updates of existing risk assessments?

The moderators will lead discussions about potential applications of the FDA tool described in its 2011 report entitled Communicating Risks and Benefits: An Evidence-Based User’s Guide.

Funding will be sought for reimbursement of travel and costs waivers of one-day SRA registration fees for invited participants from SRA Specialty Groups and other sources.

Key Supporting References


