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JDIP News is published periodically to enhance intramural communications and ensure that JDIP participants and stakeholders are updated on news of relevance to our community.

Please direct any comments, contributions and suggestions via email to: Vivek Kapur, JDIP Program Director, at vkapur@psu.edu



National Institute of Food  
and Agriculture



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## ADSA & FASS Join Efforts to Support Agriculture Research Funding

Congress continues to debate funding levels for fiscal year 2011 appropriations, including how much will be invested in agricultural research. The House and Senate have yet to agree on a long term resolution to FY 2011 funding levels, leading to some discussions about a potential government shutdown. The House has passed a bill that would reduce overall government spending for FY 2011 by about \$61 billion compared to FY 2010 levels. Under the House plan, agriculture research would be cut by significantly, with reductions of \$217 million to NIFA and \$185 million to ARS. The Senate Appropriations Committee has proposed more modest decreases in overall government spending (approximately \$10 billion), allowing for the preservation of much of the investment in agricultural research and even providing a modest increase to the AFRI program.

ADSA, along with FASS, ASAS and PSA, signed letters led by the AFRI Coalition and the National Coalition for Food and Agriculture Research (NCFAR) to Congress expressing the importance of agricultural research and the need to maintain the federal investment. Both letters expressed concern for the House passed version and that the Senate alternative better meets the critical need for investment in agricultural research. On March 9<sup>th</sup>, the full Senate considered both the House passed version and the Senate Appropriations Committee version of the FY 2011 continuing resolution, but neither received enough support for passage. ADSA will continue to work with like-minded organizations to support the investment in agricultural research as Congress works to resolve funding for FY 2011.

(Source: Lowell Randel, FASS Science Policy Rep., Mar. 21, 2011 [ADSA Dair-e-news](#))

## ***JDIP 2011 Annual Meeting with the JAM***

By: Kenneth Olson, Ph.D.



This year's JDIP Annual Conference will be held in conjunction with the 2011 JAM (Joint Annual Meeting of the American Dairy Science Association (ADSA) and the American Society of Animal Science (ASAS)). The JAM will be held July 10 – 14 in New Orleans, Louisiana <http://adsa.asas.org/meetings/2011/> , with JDIP sessions on Sunday and Monday. Sunday's JDIP session, which will be held at "New Orleans Marriott," will focus on Core and Project reports as well as future plans for JDIP. Oral and poster presentations will be part of Monday's JAM Animal Health scientific sessions at the Convention Center. A total of 23 Johne's/JDIP abstracts were accepted for presentation. On Monday, there will be one oral presentation section with 12 presentations on Monday and the remaining presentations will be in the poster session from 7:30 to 9:30 A.M.

The JAM is a major international scientific conference, with 2,500 scientists, government agencies and industry representatives from 50 nations expected to attend. The trade show will have over 100 companies and organizations sharing information with attendees. This combination provides excellent networking opportunities. Approximately 2,300 abstracts were accepted for presentation in the oral and poster session of the JAM. In addition to the regular scientific sessions, a total of 39 symposia are scheduled in conjunction with the meeting. If you are able to arrive early and/or participate in the full meeting, here are a few of the Symposia that may be of special interest:

### Saturday – July 9

- A pre-conference on "Biomedical and Agricultural Interventions or Therapies to Improve Human Health, Companion Animal Health and Farm Animal Health and Production" will be presented jointly by the American Society for Nutrition (ASN), ASAS, and ADSA. A separate registration is required for this event.

### Tuesday – July 11

- ARPAS: Understanding meta-analysis
- Bioethics: The ethical food movement: What does it mean for animal agriculture?

### Wednesday – July 12

- Animal Health: Lipid metabolism—Inflammation interactions
- Breeding and Genetics: Is there space for genomic selection in small population?
- Extension Education: Enhancing educational approaches for future changes in biosecurity and antibiotic use in animal agriculture

Many other sessions will be held during the week. The full schedule is available on the JAM site <http://adsa.asas.org/meetings/2011/>

To facilitate participation in the meeting, JDIP has arranged for a special “JDIP One-day Registration” that allows participation in JDIP activities on Sunday and JDIP and JAM activities on Monday. The cost of this registration, which is reserved for JDIP related attendees, is \$100. Instructions for on-line registration through the JAM site <http://adsa.asas.org/meetings/2011/> may be found on the JDIP site [www.jdip.org](http://www.jdip.org) under “Annual Conference,” “July 2011.” Please note that the box for entering the Promotion Code is located at the very bottom of the on-line registration page. The special rate will not be available without entering the code. If you have additional questions related to the JAM or other activities, please contact Dr. Ken Olson [keolson@prodigy.net](mailto:keolson@prodigy.net).

We look forward to seeing you in New Orleans!

### ***Travel Awards to Attend the JDIP 2011 Annual Meeting***

By: Tiffany Cunningham, J.D.

The JDIP would like to once again congratulate the recipients of the JDIP travel award to assist in attending the 2011 JDIP Annual Meeting. This award recognizes the outstanding research of graduate students and post-doctoral appointees from all over the world. This year, JDIP received a total of twelve abstracts for its annual travel award.



The submitted scholarship applications were reviewed by the Executive Committee of the JDIP. As usual, any Executive Committee member that had a conflict of interest with an application was excluded from the discussions. Overall, the JDIP was able to award eleven scholarships spanning six institutions and two countries.

Based on a review of the applications, the following graduate students and post-doctoral appointees were selected for support (listed alphabetically by last name):

- Espejo, Luis A. (University of Minnesota - USA)
- Everman, Jamie L. (Oregon State University - USA)
- Kabara, Edward (Michigan State University - USA)
- Kumar, Avnish (Central Institute for Goats - India)
- Lamont, Elise A. (University of Minnesota - USA)
- Lu, Zhao (Cornell University - USA)
- Singh, Ajay Vir (Central Institute for Goats - India)
- Singh, Pravin Kumar (Central Institute for Goats - India)
- Smith, Rebecca L. (Cornell University - USA)
- Sohal, Jagdip Singh (Central Institute for Goats - India)
- Wadhwa, Ashutosh (University of Tennessee, Knoxville - USA)

Congratulations again to our awardees!

### ***Diagnostics Project Update***

By: Kenneth Olson, Ph.D.

The JDIP Diagnostics Project is moving forward on two fronts. The initial portion of the effort has focused on developing a modified version of the Standards for Reporting of Diagnostic Accuracy (STARD) that is relevant to paratuberculosis (Johne's Disease) in ruminants. The new guidelines, called STRADAS-para TB (Standards for Reporting of Animal Diagnostic Accuracy Studies for paratuberculosis), include 25 items for evaluation. A panel of experts identified the items, with examples of each, for use in the assessments. A manuscript that includes the guidelines has been accepted for publication as a research paper in the journal *Preventive Veterinary Medicine*. Authors include Ian Gardner, Soren Nielsen; Richard Whittington; Michael Collins; Douwe Bakker; Beth Harris; Srinand Sreevatsan; Jason Lombard; Raymond Sweeney; David Smith; Jerrie Gavalchin and Shigetoshi Eda. Publication will be later this year.

The second portion of the project includes a head-to-head comparison of various diagnostic tests using a National Repository of Samples for Johne's Disease Test Evaluation created for this purpose. The project will result in a collection of well-characterized fecal, milk, and serum samples from dairy cows that have been subjected to multiple diagnostic tests prior to inclusion in the repository. Test results, plus epidemiologic/demographic data for each sample, will be archived and available for use in future diagnostic test evaluation studies. The laboratories selected to do the comparative testing were identified through a competitive bid process. All were required to have passed the NVSL check test and have a documented track record with the specified test. The participating labs and tests they will perform include:

Antel BioSystems – Serum ELISA and milk ELISA  
Cornell Animal Health Diagnostic Center – TREK and qualitative PCR  
Johne's Research Laboratory (U of Penn) - HEYM and Tetracore PCR  
Johne's Testing Center (UW-Madison) – MGIT

It is anticipated that the project will begin in May or June. Further information on the test comparisons and access to the repository will be published and available from JDIP at the end of the project.

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### ***Tools for Infectious-Disease Epidemiology: Infectious disease modeling July 20-22, 2011***

Registration is now open for Cornell's Tools for Infectious-Disease Epidemiology: Infectious disease modeling being held July 20-22 in Ithaca, NY. Save by registering before July 1.

This three day, hands-on workshop is designed for veterinarians, animal-health professionals, and graduate students who need proficiency in infectious-disease epidemiology. The course includes an introduction to deterministic "SIR" models, stochastic models and beyond "SIR" models (within host models) and learning an easy-to-use Model-Maker software. A basic understanding of infectious-disease biology and terminology is expected. For more information or to register visit our website at [www.vet.cornell.edu/events/](http://www.vet.cornell.edu/events/).

## Congratulations!

### ***JDIP Year 7 Request for Applications (RFA) Update***

By: Tiffany Cunningham, J.D.

The JDIP received and reviewed a total of 14 proposals in response to the Year 7 Request for Applications (RFA) with a total funding request exceeding \$1.2 million. For the current funding cycle a total of approximately \$500,000 was available for support of JDIP programs and operations.

All of the submitted proposals were reviewed externally, as well as by the JDIP Scientific Advisory Board (SAB) at an in-person meeting. Members of the External Advisory Board (EAB) as well as the United States Department of Agriculture (USDA) program staff were in attendance at the SAB meeting to help provide input, oversight and observe the review process. As in past cycles, anyone, who may have had a conflict of interest relative to any of the proposals being reviewed, was excluded from the discussions and was not present in the room during the discussion. The JDIP Executive Committee (EC) compiled summary statements from the SAB meeting and based on the reviews and program priorities made funding recommendations for the full EAB to consider.



JDIP would like to thank all of the internal and external reviewers from the JDIP Year 7 RFA for their hard work and dedication.

The review process would not be possible without their continued support.



#### *Review of the JDIP Year 7 RFA*

(pictured above from left to right: Drs. Hovingh, Coussens, Olson, Gröhn, Lein, and Harris. pictured adjacent from left to right Drs. Harris, Goeldner, Carter, Kapur, Bermudez, and Hines II)



Based on a review of the proposals, summary statements, and recommendations by the EC, the EAB approved the following projects for support during year 7 (listed alphabetically by the Principal Investigator's last name):

(continued on page 6)

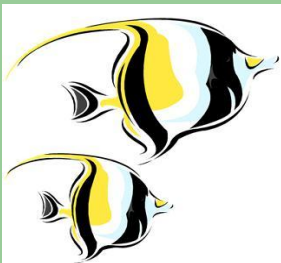
(continued from page 5)

Principal Investigator	Principal Investigator Institution	Co-Principal Investigator	Co-Principal Investigator Institution	Total Award
Bermudez, Luiz	Oregon State University	N/A	N/A	\$74,896
Coussens, Paul	Michigan State University	N/A	N/A	TBD
Godden, Sandra	University of Minnesota	Groenendaal, Huybert Wells, Scott Zagmutt, Francisco	EpiX Analytics  Univeristy of Minnesota EpiX Analytics	\$75,541
Gröhn, Yrjö	Cornell University	Gardner, Ian  Schukken, Ynte	University of California, Davis Cornell University	TBD
McDonald, Jeannette	University of Wisconsin	N/A	N/A	TBD
Schukken, Ynte	Cornell University	Gardner, Ian  Gröhn, Yrjö Wells, Scott	University of California, Davis Cornell University University of Minnesota	TBD
Sreevatsan, Srinand	University of Minnesota	Bannantine, John	USDA-ARS-NADC	\$82,569

\*\*\* Please note that all sub-awards for the projects above are in process and have not been executed at this point. \*\*\*

### ***Do Fish Have Johne's?***

By: Ian Gardner, Ph.D.



No, but Ian Gardner, a JDIP Executive Committee member, is transitioning to a new position at the Atlantic Veterinary College (AVC) at the University of Prince Edward Island (UPEI). He will head a program named the Canada Excellence Research Chair (CERC) in Aquatic Epidemiology awarded by the Canadian Government to UPEI. The goal of the CERC program is to make UPEI and Canada the global leader in applied aquatic epidemiology research (with an ecosystem health focus). Gardner will join a multi-disciplinary team of epidemiologists, statisticians, finfish, crustacean and mollusc clinicians, ecosystem health and regulatory veterinary medicine specialists whose work focuses on holistic approaches to assist the Canadian and international aquaculture industries improve the productivity, sustainability and health of farmed fish stocks. The CERC program complements the recent creation of the World Organization for Animal Health (OIE) Collaborating Centre in Epidemiology and Risk Assessment of Aquatic Animal Diseases between the Atlantic Veterinary College and the Norwegian Veterinary Institute.

Gardner is not divesting himself of Johne's activities. He will continue as JDIP Executive Committee member for the final year of the program and will participate in the JDIP annual meeting in New Orleans and the International Colloquium on Paratuberculosis in Sydney. And of course, there is always mycobacterial infections of fishes as a research area!



### ***The 11th International Colloquium on Paratuberculosis 2012***

February 5-10, 2012 in Sydney, Australia at the Sydney University Campus

Cosmopolitan Sydney is Australia's largest and most exciting city, the perfect destination for a colloquium as significant as this. Sydney is one of the world's most beautiful cities, known for its famous harbour, beaches and national parks and boasts a stunning location, temperate climate, world-leading facilities and infrastructure, a robust economy and friendly locals. Sydney is simply unforgettable.

This five day colloquium will bring together a vast array of international expertise in an exciting scientific program including presentations from the following fields:

#### The Scientific Program Highlights Include:

- 3rd ParaTB Forum (by invitation)
- Diagnostics and detection of MAP
- Host response and immunology
- Control Programs
- Pathogenomics
- Mycobacterial diseases of wildlife
- Genotyping and MAP diversity
- Industry forum
- Epidemiology
- Public Health and MAP in the environment
- International initiatives
- Synopsis and future directions

To encourage participation by young scientists, JDIP is pleased to offer Travel Awards for the meeting to postdoctoral appointees and graduate students who submit abstracts to the 11th ICP meeting. The travel awards will provide student registration fees for the meeting and \$1,000 USD toward travel expenses. Selection of travel award recipients will be based on potential for future contributions to the field and scientific merit of a submitted abstract. Application details will be available on the ICP and JDIP website shortly.

#### The 11<sup>th</sup> ICP is delighted to announce the following speakers:

- |   |   |
|---|---|
| - Douwe Bakker, Central Veterinary Institute, The Netherlands | - David Kennedy, Ausvet Animal Health Services, Australia     |
| - John Bannantine, National Animal Disease Centre, USA        | - Ad Koets, Utrecht University, The Netherlands               |
| - Marcel Behr, McGill University, Canada                      | - Polychronos Kostoulas, Greece                               |
| - Jeroen de Buck, University of Calgary, Canada               | - Kaylene Larking, Beef + Lamb New Zealand                    |
| - Lorna Citer, Animal Health Australia                        | - Eiichi Momotani, National Institute of Animal Health, Japan |
| - Mike Collins, University of Wisconsin, USA                  | - Soren Nielsen, University of Copenhagen, Denmark            |
| - Ian Gardner, University of Prince Edward Island, Canada     | - Ingrid Olsen, National Veterinary Institute, Norway         |
| - Jayne Hope, Institute for Animal Health, UK                 | - Evan Sergeant, Ausvet Animal Health Services, Australia     |
| - Vivek Kapur, University of Pennsylvania, USA                | - Srinand Srivatsan, University of Minnesota, USA             |
|   | - Karen Stevenson, Moredun Research Institute, Scotland       |

There are plenty of opportunities to catch up with old friends, meet new ones whilst enjoying the beauty of Sydney and it's surrounds during a Welcome reception, Harbour cruise, Taronga Zoo excursion and the highlight Colloquium dinner.

For further information please contact the ICP2012 Secretariat at:

PO Box 1179, Crows Nest NSW 1585, Australia

Phone: +612 9436 0232

Fax: +612 9436 4462

Email: [icp2012@conceptevents.com.au](mailto:icp2012@conceptevents.com.au)

Website: [www.icp2012.com.au](http://www.icp2012.com.au)



### ***JDIP / APHIS Vaccine Project Update***

By: John Bannantine, Ph.D.

We have now completed Phase I, the macrophage study, of the APHIS-JDIP Vaccine Project. Of the eighteen knockout mutants submitted, eight have best shown attenuation and will be moved into Phase II, the mouse trial, which will begin in May. This trial will be conducted by two independent labs, one in the extreme west, Dr. Luiz Bermudez of Oregon State University, and the other in the extreme east, Dr. Yung-Fu Chang of Cornell University. We will be measuring cfu in tissues to assess protection from the challenge inoculum. Material will also be kept back for immunological monitoring of the mice, to be performed at a separate lab. Mutants showing the best protection from challenge will be moved forward into the final phase of the vaccine project, Phase III, the goat model. Phase III will be conducted this summer in the lab of Dr. Murray Hines II at the University of Georgia.

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### ***www.jdip.org Update***

By: Kenneth Olson, Ph.D.

If you are interested in learning more of what is being done in the JDIP Core and Project areas, check out our website [www.jdip.org](http://www.jdip.org). We have begun posting the slides from updates provided in the SAB meetings on the site. We currently have "Updates" in all four project areas, as well as for Core 2. I encourage you to check it out. This is a convenient way to see more of what is being accomplished as a result of efforts supported by JDIP.

Please let us know of other information that would be of value to include on the site.

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### ***United States Animal Health Association (USAHA) 2010 Annual Meeting Update***

By: Kenneth Olson, Ph.D.

The 2010 AAVLD/USAHA Joint Annual Meeting was held November 11-17 in Minneapolis, Minnesota. Approximately 1,000 members and guests were in attendance. The JDIP display was in the registration area during the full time available for displays (11/14 – 17). There was good interest in JDIP and the information we distributed. Information distributed included: CDs that included the 2010 Annual Conference Proceedings, 2009 New Horizons proceedings, new VBJDCP Program Standards and the National Johne's Strategic Plan; all remaining hard copies of the 2010 Annual Conference Proceedings; updates on the Vaccine and Diagnostics projects; a summary of the 2009-2010 Report on Impacts of Johne's Education and Outreach efforts; a new "JDIP News and Notes" and all remaining copies of the Johne's insert from Hoard's Dairyman.

During the meeting, I had an opportunity to make short presentations to the National Assembly of State Animal Health Officials (State veterinarians) and the meeting of State Extension Veterinarians. I shared information on the vaccine and diagnostics projects, the upcoming RFA and a verbal confirmation of our renewed funding for the coming year. There was strong interest in our work and support for effort to continue in the future.

The Johne's Scientific Advisory Committee meet on Saturday, while both the National Johne's Work Group and the Johne's committee met on Sunday. There



were approximately 55 to 60 attendees present for both the WG and the committee meetings.

#### Scientific Advisory Committee Highlights:

- Work with samples from the Goat NAHMS survey was reported. Over 90 farms submitted environmental samples. They found that environmental sampling for goats was difficult and direct PCR was not species specific. Additional work is needed.
- The following recommendation was made relative to exotic deer: "The ISMAP02 target sequence has recently been associated with a false positive PCR results in tissues from exotic deer with disseminated *M. avium* infection. ISMAP02 gene has not been validated for use in tissue samples and or small ruminant, wild ruminant, or exotic ruminant fecal material. Disseminated *M. avium* infections have been observed more commonly in these ruminant species. As the target sequence of commercially available MAP reagents marketed by Applied Biosystems (Ambion), use of these reagents may result in false positive test results. Therefore we recommend that the Ambion reagents be limited to cattle fecal samples as long as these reagents target ISMAP02. A secondary confirmation test should be conducted for results that significantly impact herd status."

#### NJWG Highlights:

The meeting focused on industry initiatives and broader animal health projects to address Johne's disease in the face of declining federal program funding.

- Bill Hartmann and I reported on impacts of program funding cuts in states. Basically it has reduced the number of samples run, RAMPs completed, herds in the status program, veterinarians certified and meetings held, but there is still producer interest in addressing the disease. States vary in ways they have addressed reduced federal funding. Half of the states reporting indicated at least some state funds were designated for the program during the past year. More communication is needed with producer groups on program priorities and strategies needed to most effectively utilize the infrastructure that has been developed so we can continue to address producer needs.
- Preliminary marketing efforts verified producer interest in addressing the disease. Veterinarians, farm press and extension were all seen as credible sources of information. Personal contact and meetings were preferred to computer based delivery of information (high touch vs. high tech). Producers tended to prefer a broad-based effort that includes Johne's rather than a single disease focus.
- The New York State Cattle Health Assurance Program (NYSCHAP) was presented as a "Whole Herd Health Initiative." It contains multiple modules including Johne's disease. Producer focus over the past two years has been on survival of their operation, but support for the program remains high and has been instrumental in maintaining state funding even with tight budgets.
- National Milk Producers Federation reported on the National Dairy FARM (Farmers Assuring Responsible Management) program. The current focus is animal care but it will expand to include herd biosecurity with a Johne's component.
- The NCBA Beef Quality Assurance (BQA) program and Dairy Animal Care Quality Assurance (DACQA) program are broad based programs. Herd biosecurity, that includes Johne's control practices, are a part of both programs

- DHIA is continuing to expand efforts in the Johne's area as the number of milk ELISA samples continues to increase, currently standing at about 300,000 for 2010. Information is being incorporated into producer reports with other management information. Monthly proficiency tests for milk ELISA are being done in DHIA labs along with that for other components analyzed in the lab. There is a desire to use results from the monthly tests for approved lab status rather than requiring the annual evaluation from NVSL.
- The disease is a concern for sheep and goat producers. Utilizing lessons learned from the scrapie program was encouraged. This includes providing veterinarians with more detailed information on the disease in sheep and goats, distributing information through livestock markets, utilizing demonstration flocks as teaching tools and working with AASRP.
- Jersey breeders see Johne's as a significant issue. The Jersey Research Foundation is currently funding research projects at the University of Wisconsin and Washington State University. The Wisconsin work is comparing genetic marker for Johne's between Holsteins and Jerseys, while the WSU work is identifying gene mutations resulting in tissue susceptibility to MAP infection. It was also reported that Jersey Marketing Service required Johne's tests for animals over 24 months in their sales.
- All major AI units include Johne's testing as part of their animal screening and ongoing health programs even though the risk of transmission through semen appears low. There are international standards that need to be met as well. Source herds are expected to have a Johne's management program in place. Herds without a program are avoided. Producers they work with are provided information. Young bulls, expected to enter the stud, are tested by fecal culture at 10 ½ months of age and again two months later. Positive bulls do not enter the program. Resident bulls are normally tested twice yearly using serology and typically once with fecal culture as required by international trade standards. Positive bulls are culled or isolated.
- New Mexico has developed and is about to implement a dairy quality assurance program that grew out of a request from the Dairy Producers of New Mexico. It is a joint effort of NMSU extension and the NM Livestock Board. It was developed out of the Johne's dairy risk assessment and also includes all components of the Dairy FARM program, the DFA Gold Standard and the TB risk assessment. It addresses image, herd health and animal care. A single graduate student is doing all herd evaluations. Details are available on the web at: <http://nm.dairyassessment.com/info/inhome.asp>

No formal actions were taken by the work group, but there was interest in all of the programs.

The **Johne's Disease Committee** meeting covered a wider range of topics.

- Mike Collins reported on interpretation of the new IDEXX MAP ELISA on serum and milk based on likelihood ratios. Evaluation was conducted using 649 negative and 248 positive cows. It was found that with a herd prevalence of >6% and an S/P ratio >.60, the probability of infection was generally greater than 90%. He also noted the significant loss in lifetime production of positive cows as seen in Texas work, the greater likelihood of identifying positives in late lactation and also in second or later lactations with the milk ELISA. He reported that the Netherlands and Denmark have moved to industry wide milk ELISA testing and highlighted TAFS recommendation that the disease be controlled at the farm <http://www.tseandfoodsafety.org/>. Education modules, produced by the Technology Learning Center from the School of Veterinary Medicine at the University of Wisconsin, were highlighted. He also noted potential human health concerns including work reported in the September 2010 World Journal of Gastroenterology that

found 30 of 30 Crohn's patients positive for MAP and work from Scotland that found 25% of the cheeses sampled positive for MAP.

- Mike Carter reported on the status of the national program, including a review of the new program guidelines. Comparing figures for FY 06 with FY 10 all metrics have dropped substantially. Program herds have dropped from 8,736 to 3,787; status herds from, 1,779 to 375; serum ELISA from 784,978 to 149,770; culture and PCR from 125,336 to 11,631, pooled samples from 3,049 to 1,757 and environmental samples from 1,700 to 25. He reported the new program standards recommended last year have been adopted by APHIS and are being implemented by the states.
- Dr. Donald Zink, FDA, highlighted the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) report on the importance of food as a source of exposure to MAP. Their task was to report on the importance of food as a source of exposure to MAP not to determine if MAP was a human pathogen or if it plays a role in Crohn's disease. They looked at:
  - o What food or environmental sources are of most concern?
  - o What are the frequencies and levels of contamination?
  - o What is the efficacy of current detection methods?
  - o What processing interventions are available to reduce or eliminate food exposure?
  - o What are the research needs?

They found that:

- o Current MAP detection methods have significant limitations
- o Standard methods are needed for recovery of viable cells in order to facilitate comparison of data on the presence and frequency of MAP in foods
- o Other than MAP-infected domestic ruminants, MAP is found infrequently.
- o If MAP in cattle is controlled, MAP in other animals and the environment may be largely eliminated.
- o Milk, and raw milk in particular, may be a likely food source for humans. Thermal processes that deliver a 4 to 7 log reduction of MAP cells should be adequate to inactivate the numbers of MAP estimated to be in raw milk
- o A small percentage (<3%) of commercially pasteurized milk may contain low numbers of viable MAP
- o Although data is limited, cheese made from pasteurized milk is probably not a significant source of MAP
- o Given the prevalence of MAP in US dairy herds, ground beef may be a potential source of MAP
- o There is no data to indicate that municipal drinking water is a source of human exposure to MAP
- o MAP survives in cattle feces, water, and soil and is found in many wild animals. Therefore, farm runoff may contaminate irrigation water that comes into contact with fruits and vegetables that could be a source of human exposure.
- o Additional research is needed to better define the variety of routes, including food and the environment, by which humans can be exposed to MAP

Research needs include:

- o Improved detection methodology
  - Detection of viable vs. non-viable cells
  - Sample preparation prior to detection (concentration and decontamination)
  - Efficient lysis of cells and extraction of nucleic acid(s)

- Interpretation of positive and negative results
  - Standardization around a “gold standard” methodology
    - Additional food sources of MAP?
  - Studies on ground beef, cheeses from raw milk, and fresh produce from areas of high and low domestic ruminant prevalence
  - Role of water? There is a need for a large-scale prevalence study in municipal water, both pre- and post-treatment
  - Does MAP survive in food processing facilities?
  - Information on cell response to physical conditions with respect to survival and persistence
  - Additional well-controlled studies on the effects of pasteurization on naturally occurring MAP using commercial conditions
  - Studies to identify potential pre- and post-harvest interventions to prevent MAP from entering the food supply
    - Example: ultra-filtration is an emerging technology for fluid milk production – how will this affect removal of MAP from the milk?
  - The complete report was published in 2010 in the Journal of Food Protection 73(7):1357 – 1397.
- Reports were presented on Scientific Advisory Committee meeting (reported above), the National Johne’s Education Initiative activities, the JDIP Outreach Survey results and the JDIP vaccine and diagnostics projects.
  - The report on the national Demonstration herd project indicated that data collection has now been completed. A total of 58 dairy and 20 beef herds have at least 5 years of data. Analysis to date has shown:
    - Prevalence has decreased in participating herds
    - Dairy Herds: most important areas from risk assessment
      - Multiple animal use in calving area
      - Manure soiled udders/legs in calving area
      - Presence of JD clinical /suspects in calving area
    - Beef Herds: most important areas from risk assessment
      - Cow/calf pairs kept with Johne’s clinical or suspect animals
      - Possible manure contamination of water for preweaned heifers
      - Direct access to accumulated or stored manure for cows
    - A number of publications are planned for the coming year.
  - Bill Shulaw reported on added use of the Ohio Demonstration herds to address concerns over PCR+ and Trek culture negative results in positive herds. PCR identified >80% of heavy and moderate shedders (@Ct <40). They found that In known infected herds, PCR+ results with relatively high Ct values need to be interpreted with caution.

No resolutions were brought forward, but USDA APHIS will assess the use of the monthly DHIA milk ELISA proficiency test for lab approval. It is anticipate that the request will be acted on during the coming year.

The 2011 USAHA Annual Meeting will be held September 29 to October 5 at the Buffalo Adam’s Mark in Buffalo, NY. Johne’s meetings will be held on October 2.

## Upcoming Meetings and Events

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May 21 - 24, 2011  
 111th General Meeting - American Society for Microbiology  
 New Orleans, LA. USA  
<http://gm.asm.org/>

July 10-14, 2011  
 2011 JAM (Joint Annual Meeting of ADSA and ASAS) / JDIP Annual Conference  
 New Orleans, LA. USA  
<http://adsa.asas.org/meetings/2011/>

July 16-19, 2011  
 2011 AVMA Annual Convention  
 St. Louis, MO. USA  
<https://www.avmaconvention.org/avma11/public/enter.aspx>

July 20-22, 2011  
 Tools for Infections Disease Epidemiology: Infections disease modeling  
 Cornell University  
 Ithaca, NY. USA  
<http://www.vet.cornell.edu/events/>

September 22-24, 2011  
 2011 AABP Annual Conference  
 St. Louis, MO. USA  
<http://www.aabp.org/meeting/default.asp>

September 29 – October 5, 2011  
 115<sup>th</sup> USAHA Annual Meeting  
 Buffalo, NY. USA  
<http://www.usaha.org/meetings/>

October 4 - 8, 2011  
 World Dairy Expo at the Alliant Energy Center of Dane County in  
 Madison, Wisconsin. USA  
<http://www.worlddairyexpo.com/gen.home.cfm>

February 5 - 10, 2012  
 11<sup>th</sup> International Colloquium on Paratuberculosis  
 Sydney, Australia  
[www.icp2012.com.au](http://www.icp2012.com.au)

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