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Visit our website at:  
<http://www.jdip.org>

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

Please direct any contributions, suggestions and comments via email to: Bob Schroeder, at [schro488@umn.edu](mailto:schro488@umn.edu)



Funding for JDIP is provided through competitive award number 2004-35605-14243 from the Animal Biosecurity Program of USDA-CSREES-National Research Initiative.

## JDIP Year 3 proposals currently undergoing review

The Johne's Disease Integrated Program recently issued a request for applications (RFA) for funding for year 3 of the program (*see JDIP News, Vol. 2, Issue 2*), with applications due by May 1, 2006. In response to the RFA, JDIP has received 24 applications, of which 15 are for new, developmental projects. The total amount requested was over \$2.1 million, which is approximately double the amount that is expected to be available for distribution.

To help determine which projects will be funded, and at what levels, JDIP uses a multi-layered review and evaluation process that includes a group of external experts, as well as members of the Scientific Advisory Board (SAB), the Executive Committee, and the External Advisory Board.

This year, 16 external experts graciously offered to assist JDIP with the review process. Each of the experts reviewed at least 5 proposals, and each proposal was reviewed by at least 3 of these experts. They evaluated each proposal using the same criteria, including: significance; approach; feasibility; innovation; investigators; environment; budget; and, for continuation cores or projects, the progress of the project. The external reviewers have now completed their evaluations, and we gratefully acknowledge their time and effort, and thank them for their valuable insight.

On June 29-30, 2006, the SAB met at the University of Minnesota to conduct its own review and evaluation of the proposals. In this review, the SAB focused on the science of the proposals, and used the same criteria that were used by the external reviewers. However, the process also provided the opportunity for thorough discussion of each proposal, particularly relating to its strengths and weaknesses.

JDIP's Executive Committee will now review the findings of the SAB and develop formal recommendations for approval of funding, which will be presented to the External Advisory Board for its input.

It is anticipated that final approval of funding determinations by JDIP will occur shortly, with the funding to be awarded as soon as possible after August 1, 2006.

## JDIP establishes international expert committee to develop standardized animal models

In the research of Johne's disease (JD), the number of variables between studies, such as animal species, challenge parameters, MAP doses and strains, dosage intervals, etc., makes direct comparison very difficult and often impossible, greatly hindering the advancement of research.

*(Animal Models continued on page 2)*

**JDIP Scientific Advisory Board**

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**Animal Models** (continued from page 1)

Late last year, this problem was detailed at the 8<sup>th</sup> International Colloquium for Paratuberculosis in Copenhagen, and the necessity of a standardized challenge model for vaccine efficacy studies was identified.

In response to this need, JDIP is sponsoring an international committee of experts to develop internationally-recognized standard model(s) for JD challenge and vaccine efficacy studies.

Organized by **Murray Hines**, University of Georgia (who serves as committee chair), along with **Judith Stabel**, National Animal Disease Center, and **Ray Sweeney**, University of Pennsylvania, the committee includes over 20 internationally-recognized experts in JD from the United States, the European Union, Australia, and New Zealand. The committee will develop the standardized models by expert consensus based upon literature review and research experience.

The committee conducted teleconferences at the end of May, during which the literature review process was initiated, and in mid-July. At the end of July, the committee will meet face-to-face in Orlando, Florida, to discuss the various details that must be addressed to accomplish its goal and gain consensus.

The committee results will be organized into a manuscript proposing international JD challenge models for cattle, sheep and goats. This manuscript will be submitted to a well-respected, peer reviewed, international journal for publication.

## JDIP Genomics Core offers research tools

Johnes's disease (JD), found worldwide in domestic ruminants such as cattle and sheep, as well as in wildlife, has been estimated to cause financial losses of over \$220 million per year. Because of this financial burden, particularly on the U.S. dairy industry, and because of the impact of JD on animal health, alleviating the adverse effects of JD is a high priority for the USDA.

Accomplishing this requires an understanding of JDs causative agent, *Mycobacterium avium* subspecies *paratuberculosis* (*Map*). Unfortunately, the genetics of this pathogen are poorly developed, and there are major problems in studying the molecular pathogenesis. Creative approaches, including genomics and proteomics, are necessary to further our understanding of *Map*.

Researchers in JDIP's Genomics, Proteomics and Antibodies Core have undertaken these creative approaches. As a result, they have developed several tools that are available for JDIP members to use in their research.

(Genomics Core continued on Page 3)



### *Genomics Core (continued from Page 2)*

**Transposon mutants:** Three *Map* random transposon mutant libraries have been generated. (1) **Raúl Barletta** at the University of Nebraska has a library of 13,824 stocked mutants. (2) **Adel Talaat** at the University of Wisconsin has a library of 5,000 mutants, of which approximately 1100 have been sequenced and mapped. The remainder of the library is scheduled to be sequenced by next year. (3) **Luiz Bermudez** at Oregon State University has a signature tagged library of 5,000 mutants.

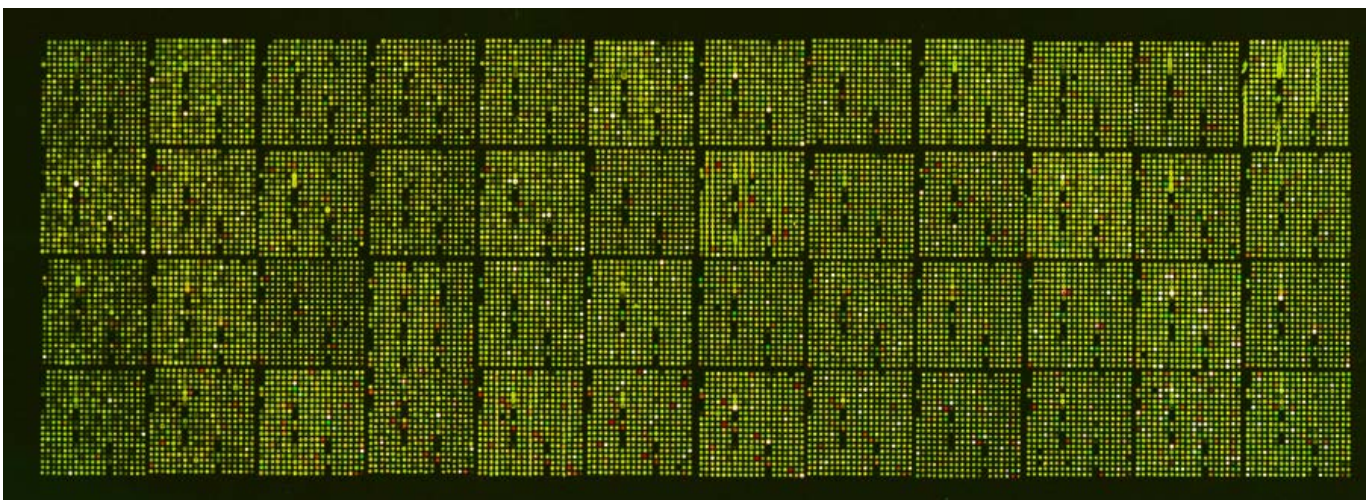
**Oligonucleotide microarray:** A 70mer oligonucleotide microarray has been developed by **Mike Paustian** at the National Animal Disease Center. It contains oligos representing all of the predicted coding sequences in *Map* K-10 as well as large intergenic sequences and predicted coding sequences from *Maa* 104 that are less than 30% identical to *Map* K-10. The specifications of this microarray platform have been deposited at the NCBI Gene Expression Omnibus under the accession number GPL3433.

**Recombinant proteins:** Approximately 250 *Map* genes have been cloned and purified as fusion proteins by **John Bannantine** at the National Animal Disease Center. Additional *Map* genes continue to be cloned and expressed.

**Monoclonal antibodies:** **John Bannantine** at the National Animal Disease Center has developed monoclonal antibodies (mAbs) against the following *Map* genes: MAP2121c (surface protein), MAP1643 (isocitrate lyase) and MAP3840 (dnaK) as well as 10 additional mAbs whose binding targets are not yet known. **Bill Davis** at Washington State University has developed a mAb to the bovine activation molecule CD69. Additional mAbs currently in development are targeted at both *Map* genes and the bovine immune system.

**Web portal:** A web portal is being developed by the JDIP Genomics Core to serve as a central resource for the storage and retrieval of genomics data by the JDIP community. The website will also provide JDIP researchers with web-based tools to visualize and analyze genomic data. More information will be provided in a future JDIP newsletter when the website nears completion.

Please contact the researchers listed if you have any questions about the specific materials described above. General questions about the Core can be directed to **Mike Paustian** ([mpaustia@nadc.ars.usda.gov](mailto:mpaustia@nadc.ars.usda.gov)).



JDIP oligonucleotide microarray hybridized with fluorescently labeled genomic DNA

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## JDIP receives funding for white paper development

In response to a need identified at the US Animal Health Association annual meeting in 2005, JDIP has proposed and received approval from USDA-APHIS-VS to begin work on a white paper addressing the potential economic impacts of Johne's disease, including the estimated impacts of a potential link between Johne's disease and human health. USDA will provide \$50,000 in funding for the project, with JDIP paying for any remaining initial costs.

The initial project will focus on the dairy industry, with the beef industry to be considered in a future project.

The paper will be developed by **Huybert Groenendaal** and **Francisco Zagmutt** of Vose Consulting. In addition, **Ken Olson** of Dairy Management, Inc. (DMI) will provide input and assistance and facilitate information exchange with DMI and the International Dairy Foods Association.



above: **Huybert Groenendaal** (left) and **Francisco Zagmutt**, Vose Consulting; right: **Ken Olson**, Dairy Management, Inc.





## More news you can use

Ever have a file that you need to send to a colleague, but it's too large to send via email? A web site called **YouSendIt.com** can help you out. It will allow you to upload a file up to 1GB to their server for free, and notify the recipient(s) you want to have the file. Your recipient then downloads it by clicking on the link that's provided. Files larger than 1GB can also be sent, but require a paid account.



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### E-MAIL TIPS

Tim Sanders, author and former Yahoo executive, offers the following e-mail etiquette tips:

**1 Don't say no:** "E-mail is for yes, maybe, passing on information or answering a question. If you're going to say no, pick up the phone."

**2 Don't CC:** "Try to limit CCing your boss ... The (primary recipient) can become rather resentful."

**3 Use the draft to cool off:** "Never send an e-mail when you're mad. Touch your fingers to your eyelids and if they're hot, put the e-mail into the drafts box and revisit once you've calmed down."

**4 Stop replying to all:** "Erase the 'reply all' button from your e-mail. Take the time to think who the e-mail really needs to go to."

**5 Consider the time:** "Don't send company e-mails throughout the night. If your employees see you working late, they will feel they have to as well ... (and be) resentful."

## Upcoming meetings and conferences that may be of interest

### JDIP External Advisory Board

John Adams  
(NATIONAL MILK PRODUCERS  
FEDERATION)

Michael A. Carter  
(USDA-APHIS-VS)

Roy Curtiss III  
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Mark Tizard  
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Cynthia Wolf  
(U. OF MINNESOTA)

- JDIP Animal Model Standardization Committee  
Orlando, FL July 27 – 28, 2006
- University of Wisconsin School of Veterinary Medicine/USDA Animal and Plant Health Inspection Service 4th Biennial Foreign Animal Diseases Training Course.  
Madison, WI July 30 - August 4, 2006.  
<http://www.vetmed.wisc.edu/pbs/courses/FAD2006>
- 11th International Symposium on Veterinary Epidemiology and Economics (ISVEE XI)  
Queensland, Australia, August 6 - 11, 2006.  
<http://www.isveexi.org/>
- American Association of Bovine Practitioners 39th Annual Convention.  
St. Paul, MN Sept. 21 - 23, 2006.  
<http://www.aabp.org/meeting/default.asp>
- 46<sup>th</sup> Annual Interscience Conference on Antimicrobial Agents and Chemotherapy.  
San Francisco, CA September 27 - 30, 2006.  
<http://www.icaac.org/>
- Infectious Diseases Society of America 44<sup>th</sup> Annual Meeting.  
Toronto, Ontario, Canada October 12-15, 2006.  
<http://www.idsociety.org/Template.cfm?Section=Meetings>
- United States Animal Health Association 110<sup>th</sup> Annual Meeting.  
Minneapolis, MN October, 12 - 19, 2006.  
<http://www.usaha.org/meetings/>
- Conference of Research Workers in Animal Diseases.  
Chicago, IL December 3 - 5, 2006.  
<http://www.cvmb.colostate.edu/microbiology/crwad/index.htm>



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## JD ON THE WEB

Johne's Disease-related Websites

Organization	URL
American Association of Bovine Practitioners	<a href="http://www.aabp.org">http://www.aabp.org</a>
American Dairy Science Association	<a href="http://www.adsa.org">http://www.adsa.org</a>
American Society for Microbiology	<a href="http://asm.org/">http://asm.org/</a>
American Veterinary Medical Association	<a href="http://avma.org">http://avma.org</a>
Conference of Research Workers in Animal Diseases	<a href="http://www.cvmb.colostate.edu/microbiology/crwad/index.htm">http://www.cvmb.colostate.edu/microbiology/crwad/index.htm</a>
Infectious Diseases Society of America	<a href="http://www.idsociety.org">http://www.idsociety.org</a>
International Association for Paratuberculosis	<a href="http://paratuberculosis.org/">http://paratuberculosis.org/</a>
Johne's Disease Integrated Program	<a href="http://www.jdip.org">http://www.jdip.org</a>
National Johne's Education Initiative	<a href="http://johnesdisease.org/">http://johnesdisease.org/</a>
National Veterinary Services Laboratory	<p>Approved labs for fecal culture:  <a href="http://www.aphis.usda.gov/vs/nvsl/labcertification/johnesculture.htm">http://www.aphis.usda.gov/vs/nvsl/labcertification/johnesculture.htm</a></p> <p>Approved labs for serology:  <a href="http://www.aphis.usda.gov/vs/nvsl/labcertification/johnesserology.htm">http://www.aphis.usda.gov/vs/nvsl/labcertification/johnesserology.htm</a></p>
United States Animal Health Association	<a href="http://www.usaha.org">http://www.usaha.org</a>
University of Wisconsin Johne's Information Center	<a href="http://www.johnes.org">http://www.johnes.org</a>
USDA Johne's disease website	<a href="http://www.aphis.usda.gov/vs/naahps/johnes/">http://www.aphis.usda.gov/vs/naahps/johnes/</a>
USDA-APHIS-VS-National Center for Animal Health Surveillance	<a href="http://www.aphis.usda.gov/vs/ceah/ncahs/index.htm">http://www.aphis.usda.gov/vs/ceah/ncahs/index.htm</a>

## JD IN PRINT

Johne's Disease-related Publications – April, 2006 - July, 2006

- **Aranaz, A., L. De Juan, J. Bezos, J. Alvarez, B. Romero, F. Lozano, J. L. Paramio, J. Lopez-Sanchez, A. Mateos, and L. Dominguez.** 2006. Assessment of diagnostic tools for eradication of bovine tuberculosis in cattle co-infected with *Mycobacterium bovis* and *M. avium* subsp. *paratuberculosis*. *Vet Res* 37:593-606.
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- **Gumber, S., G. Eamens, and R. J. Whittington.** 2006. Evaluation of a Pourquier ELISA kit in relation to agar gel immunodiffusion (AGID) test for assessment of the humoral immune response in sheep and goats with and without *Mycobacterium paratuberculosis* infection. *Vet Microbiol* 115:91-101.
- **Gwozdz, J. M.** 2006. Comparative evaluation of two decontamination methods for the isolation of *Mycobacterium avium* subspecies *paratuberculosis* from faecal slurry and sewage. *Vet Microbiol* 115:358-63.
- **Hendrick, S. H., T. F. Duffield, K. E. Leslie, K. D. Lissemore, M. Archambault, R. Bagg, P. Dick, and D. F. Kelton.** 2006. Monensin might protect Ontario, Canada dairy cows from *paratuberculosis* milk-ELISA positivity. *Prev Vet Med*. Epublication ahead of print.
- **Hendrick, S. H., D. F. Kelton, K. E. Leslie, K. D. Lissemore, M. Archambault, R. Bagg, P. Dick, and T. F. Duffield.** 2006. Efficacy of monensin sodium for the reduction of fecal shedding of *Mycobacterium avium* subsp. *paratuberculosis* in infected dairy cattle. *Prev Vet Med*. Epublication ahead of print.
- **Herthnek, D., S. Englund, P. T. Willemsen, and G. Bolske.** 2006. Sensitive detection of *Mycobacterium avium* subsp. *paratuberculosis* in bovine semen by real-time PCR. *J Appl Microbiol* 100:1095-102.
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