



Editors

Ian Gardner
(iagardner@ucdavis.edu)

Yrjo Grohn
(ytg1@cornell.edu)

Vivek Kapur
(vkapur@umn.edu)

Ken Olson
(keolson@prodigy.net)

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<http://www.jdip.org>

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 contributions, suggestions and comments via email to: Vivek Kapur at vkapur@psu.edu



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IN THIS ISSUE:

	<u>Page</u>
JDIP 4 th Annual Conference	1
New JDIP Program Associate	1
JDIP Proposal Evaluation Update	2
Current Happenings in <i>MAP</i>	3
National Dairy Producer Survey	3
National Johne's Work Group	5
Johne's in the Producer Press	5
Upcoming Meetings and Conferences	6
JD on the Web	8
JD in Print	9-11
4 th Annual Conference Call for Abstracts	12-13

JDIP 4th Annual Conference

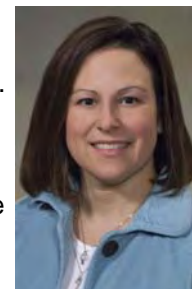
The JDIP 4th Annual Conference will take place on April 18-20, 2008 at the [James B. Henry Center](#) at Michigan State University. For more information please contact Natalie Novak at (814) 863-0340 or JDIPassistant@psu.edu.

The Call for Abstracts can be found on pages 12-13 of the newsletter.

New JDIP Program Associate

On October 22 Natalie Novak joined JDIP as program associate.

Prior to joining JDIP she worked as administrative assistant for the Department of Recreation, Park and Tourism Management. She spent 2 years at The Energy Institute with the College of Earth and Mineral Science where she was the point of contact for the membership for 3 Department Of Energy sponsored consortia. Natalie was responsible for administering and tracking grants, the request for proposal process, organizing and coordinating consortia meetings, handling the day to day business of the consortia, and database design.



A Pennsylvania native, Natalie was born and raised in Pittsburgh. She resides in State College with her 7 year old son, Tristan.

To contact Natalie, you may reach her via email at JDIPassistant@psu.edu via telephone at (814) 863-0340.

JDIP Proposal Evaluation Update

On November 27-28, 2007 the JDIP Scientific Advisory Board (SAB) met at the Penn Stater Hotel and Conference Center in State College, PA to evaluate the 27 proposals submitted to JDIP in response to the Request for Applications (RFA) in July 2007. Several vaccine proposals were received in response to this RFA. It was determined that the most efficient way to move forward that offers the greatest likelihood of success, would be to bring the primary investigators of the proposals together to establish criteria that potential candidates would need to meet in order to be considered for study and then to define the process by which the candidates would be evaluated.



Meeting participants

On January 12, 2008, the investigators of the vaccine proposals and some members of the JDIP Executive Committee met in Chicago to establish criteria and define the evaluation process. Attendees included: Murray E. Hines, John Bannantine, Paul M. Coussens, Adel Taalat, Vivek Kapur, Yung-Fu Chang, Raul G. Barletta, Ray Sweeney, Luiz E. Bermudez, Ken Olson, Mike Carter and Bill Davis.

The meeting goals were to:

- Establish a set of criteria for selection of potential candidates for vaccine development;
- Establish relevant goals and criteria for in vitro assays of candidates, and determine the best animal model within those confines;
- Identify the research gates a candidate must pass through before the ultimate gate of testing in the animal model;
- Identify ways in which resources be leveraged;
- Identify key resources that can be captured for the JDIP during the course of the project;
- Identify the desired correlates of protection for new vaccines.

Criteria for attenuated mutant candidates, as well as subunit, DNA and killed whole cell candidates are being finalized and will be available shortly.

Funding decisions on all proposals submitted in response to the JDIP RFA will be released soon.



Meeting participants



Current Happenings in *MAP*

By John Bannantine

In surveying the *M. paratuberculosis* literature over the last few months, there are some surprises, such as MAP implicated as a trigger for type I diabetes (1), and some breakthroughs, including the construction of a viral vaccine delivery vector expressing MAP peptides which showed protection in mice (2). Other new discoveries made with our favorite bacterium include its susceptibility to thiopurine drugs (3), identification of novel antigens (4), and the existence of a single predominant subtype in bovine fecal samples (5).



The Crohn's link appears to be getting stronger and the latest articles continue to add weight to this association. Marcel Behr's group has observed a convincing number of MAP bacilli in tissues of Crohn's patients versus controls by light microscopy and in situ hybridization (6). Over 50 patients from two independent sites were included in this study. A study that has captured the attention of the popular press (7) and generated discussion among researchers is the implication of a secreted factor from MAP that helps *E. coli* HM605 survive in phagocytic cells and potentially cause Crohn's disease (8). More follow up studies are needed to determine if MAP secretes this type of effector molecule, determine what it is, and repeat the studies with a purified form of the molecule. As of right now, I disagree with the statement that headlines the press release – Map "stops our bodies from fighting off Crohn's disease" – as that is an overextension of the data.

Two exciting findings have been made in the area of pathogenesis. A group led by Luiz Bermudez has defined a clear role for the MAP oxireductase in invasion of epithelial cells (9). This oxireductase (MAP3464) is located in the bacterial membrane where it exports another hypothetical MAP protein (MAP3985c), which interacts with the host molecule Cdc42. A second study, led by the Weiss group characterizes the important role that TLR2 receptors play in MAP killing (10).

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2. Bull TJ, Gilbert SC, Sridhar S, Linedale R, Dierkes N, Sidi-Boumedine K, Hermon-Taylor J. 2007. A Novel Multi-Antigen Virally Vectored Vaccine against *Mycobacterium avium* subspecies *paratuberculosis*. *PLoS ONE* 2(11):e1229.
3. Shin SJ, Collins MT. 2008. Thiopurine drugs (azathioprine and 6 mercaptopurine) inhibit *Mycobacterium paratuberculosis* growth in vitro. *Antimicrob Agents Chemother.* (in press)
4. Bannantine, JP, Paustian, ML, Waters, WR, Stabel, JR, Palmer, MV, Li L, Kapur, V. 2008. Profiling bovine antibody responses to *Mycobacterium avium* subspecies *paratuberculosis* infection using protein arrays. *Infect Immun.* (in press).

5. Cernicchiaro N, Wells SJ, Janagama H, Sreevatsan S. 2008. Influence of Type of Culture Medium on Characterization of *Mycobacterium avium* subsp. *paratuberculosis* Subtypes. J Clin Microbiol. 2008 46(1):145-9.
6. Jeyanathan M, Boutros-Tadros O, Radhi J, Semret M, Bitton A, Behr MA. 2007. Visualization of *Mycobacterium avium* in Crohn's tissue by oil-immersion microscopy. Microbes Infect. 9(14-15):1567-73.
7. Poulter, S. 2007. Milk bug 'stops our bodies from fighting off Crohn's disease'.
http://www.dailymail.co.uk/pages/live/articles/news/news.html?in_article_id=501033&in_page_id=1770
8. Mpofo CM, Campbell BJ, Subramanian S, Marshall-Clarke S, Hart CA, Cross A, Roberts CL, McGoldrick A, Edwards SW, Rhodes JM. 2007. Microbial mannan inhibits bacterial killing by macrophages: a possible pathogenic mechanism for Crohn's disease. Gastroenterology 133(5):1487-98.
9. Alonso-Hearn M, Patel D, Danelishvili L, Meunier-Goddik L, Bermudez LE. 2008. The *Mycobacterium avium* subsp. *paratuberculosis* MAP3464 gene encodes an oxidoreductase involved in invasion of bovine epithelial cells through the activation of host cell Cdc42. Infect Immun. 76(1):170-8.
10. Souza CD, Evanson OA, Weiss DJ. 2008. Role of cell membrane receptors in the suppression of monocyte anti-microbial activity against *Mycobacterium avium* subsp. *paratuberculosis*. Microb Pathog. (in press).



National Dairy Producer Survey

The long awaited National Dairy Producer Johne's survey is about to begin. The survey, which will be mailed to over 15% of the dairy producers in each state in February, will seek to identify barriers to and incentives for participation in the Voluntary Bovine Johne's Disease Control Program. Information gained will be used to improve the program and also identify informational needs of the program. An on-line version of the survey will be available, allowing producers the option of completing the paper version or the form "on-line". Producers who do not receive a copy of the survey by mail will also be able to visit the website to provide their input on the program. The address for the survey site will be distributed through producer publications and will be available from state designated Johne's coordinators. Participation is voluntary, but all producers are strongly encouraged to provide their input on the survey. It is anticipated that a second project, later this year, will use producer focus groups and other targeted survey's to clarify and add to the information gathered in this survey.



National Johne's Work Group

Both the USAHA Johne's Disease Committee and the National Johne's Work Group (NJWG) are transitioning in their leadership. Dr. Andy Schwartz (TX) is now serving as chair of the Johne's committee and Dr. Beth Patton (WI) is the new vice-chair. John Adams retired from National Milk Producers Federation (NMPF) in 2007 and stepped down as co-chair of the NJWG at that time. During the fall meeting of the NJWG, Dr. Bob Whitlock announced plans to step down as co-chair of the group effective January 1, 2008. A new leadership team composed of Dr. Scott Wells (MN) the immediate past chair of the Johne's Committee, Dr. Jamie Jonker (NMPF) and Dr. Elizabeth Parker (NCBA) has now stepped in as co-chairs of the group. Our gratitude and appreciation is extended to Bob and John for their many years of dedicated service to the NJWG, and we look forward to their continued participation with the group.

The NJWG will continue to move forward. The next meeting is scheduled for Monday March 31, 2008 in Indianapolis, IN. immediately prior to the NIAA Annual Meeting. A major topic of discussion is expected to be the development of an updated Johne's Strategic Plan. Meeting details will be available soon.

Johne's in the Producer Press

Date	Page	Magazine	Title
9/7/07	28	Midwest Dairy Business	Johne's: Where's the Information?
10/10/07	662	Hoard's	Joint project sheds more light on Johne's
11/9/07	On-line	Dairy Herd Management	Reduce calf exposure to Johne's
11/26/07	21	Feedstuffs	USAHA calls for new Johne's strategic plan
12/10/07	832	Hoard's	Johne's is big focus at vet meeting

Johne's News and Notes:

11/10/07	748	Hoard's	Calves can give Johne's to each other

Looking for a few good samples!

Submitted by Janet Payeur and Becky Manning

The JDIP Diagnostic and Strain Differentiation Core is requesting the submission of well-characterized samples from your JDIP projects and other sources such as the USDA Johnes's demonstration herds. Researchers are encouraged to submit



"The Freezer Farm"

samples to the JDIP repository housed at the National Veterinary Services Laboratories or the University of Wisconsin-Madison. Please call or email Dr. Janet Payeur (515-663-7003)

janet.b.payeur@aphis.usda.gov or Dr. Becky Manning (608-265-4658) emanning@wisc.edu to make appropriate shipping/ packing arrangements for submissions.

The sample criteria are as follows:

- Feces – 100 gm minimum;
- Sera – 100 mls minimum;
- Milk – 100 mls minimum;
- Characterized isolates on slants or liquid culture;
- Tissue (lymph nodes or intestinal tract) from known infected animals.



An example of how **not** to ship samples

To maximize the benefit to your colleagues from these samples, please include diagnostic data regarding the sample: animal species, animal ID, infection status, geographic location of animal host diagnostic test results such as ELISA, AGID and culture, and any other history that might be useful for other investigators. You can just send an email with this information for logging into the repository.



Sample collection

This extensive biological sample repository has been established to support a broad range of JDIP research activities. Samples in this repository will be available for use by any JDIP investigator with cost recovery for shipping. Currently, the repository includes low passage *Mycobacterium avium* subspecies *paratuberculosis* isolates (varied strains of the organism isolated using a variety of culture conditions), serum, tissue, feces, and milk collected from different species (domestic and non-domestic) in varied phases of *MAP* infection.

Further information on the JDIP Sample Shop can be obtained at <http://www.jdip.org>. Further information on the sample repository can be obtained by emailing JDIPsamples@svm.vetmed.wisc.edu.



JDIP Core and Project Leaders**Core 1: Epidemiology & Biostatistics**

Ian Gardner (co-leader)
530-752-6992

iagardner@ucdavis.edu

Yrjo Grohn (co-leader)

607-253-4394

ytq1@cornell.edu

Core 2: Diagnostics & Strain Differentiation

Janet Payeur

515-663-7676

janet.b.payeur@aphis.usda.gov

Core 3: Genomics, Antibodies & Proteomics

Michael Paustian

515-663-7979

mpaustia@nadc.ars.usda.gov

Core 4: Animal Models & Facilities

Murray Hines II

229-386-3340

mhinesii@uga.edu

Core 5 / Project 5: Extension & Communications

Jeannette McDonald (co-leader)

608-263-5170

mcdonal7@wisc.edu

Ernest Hovingh (co-leader)

814-863-2160

eph1@psu.edu

Core 6: Administration

Vivek Kapur

612-625-7712

vkapur@umn.edu

Project 1: Epidemiology and Transmission

Ynte Schukken

607-255-8202

Yhs2@cornell.edu

Project 2: Diagnostics and Strain Differentiation

Srinand Sreevatsan

612-625-3769

Sreev001@umn.edu

Project 3: MAP Biology and Pathogenesis

Luiz Bermudez

541-737-6538

luiz.bermudez@oregonstate.edu

Project 4: MAP Immunology and Vaccine Development

Paul Coussens

517-353-3158

coussens@msu.edu

Upcoming Meetings and Conferences

- World Ag Expo
Tulare, California
February 12 – 14, 2008
<http://www.worldagexpo.com/index.html>
- USAHA West Regional Meeting
John Ascuaga's Nugget Hotel
Reno, Nevada
March 4 – 6, 2008
- JDIP 4th Annual Conference
Michigan State University, James B. Henry Conference Center
East Lansing, Michigan
April 18 – 20, 2008
<http://www.msuhenrycenter.org>
- USAHA South Regional Meeting
Charleston, West Virginia
May 3 – 5, 2008
- USAHA North Central Regional Meeting
Bismarck, North Dakota
June 3 – 5, 2008
- USAHA Northeast Regional Meeting
Bar Harbor Regency Hotel
Bar Harbor, Maine
June 8 – 11, 2008
- World Dairy Expo
Alliant Energy Center of Dane County, Madison, WI
September 3 – October 4, 2008
<http://www.worlddairyexpo.com/gen.home.cfm>
- USAHA/AAVLD 112th annual meeting
Sheraton Greensboro Hotel
Greensboro, North Carolina
October 21 - 28, 2008
<http://www.usaha.org/meetings/>
- NMPF/NDB/UDIA Annual Meeting
Gaylord Opryland Resort and Convention Center
Nashville, Tennessee
October 28 – 30, 2008
<http://www.nmpf.org>

JD ON THE WEB

Johne's Disease-related Websites

Organization	URL
American Association of Bovine Practitioners	http://www.aabp.org
American Dairy Science Association	http://www.adsa.org
American Society for Microbiology	http://asm.org/
American Veterinary Medical Association	http://avma.org
Conference of Research Workers in Animal Diseases	http://www.cvmbs.colostate.edu/microbiology/crwad/index.htm
Infectious Diseases Society of America	http://www.idsociety.org
International Association for Paratuberculosis	http://paratuberculosis.org/
JDIP: Johne's Disease Integrated Program	http://www.jdip.org
JDIP Sample Shop	http://seeker.doit.wisc.edu/jdip/Default.aspx
National Agricultural Library	http://www.nal.usda.gov/awic/pubs/johnes/johnes.htm
National Johne's Education Initiative	http://johnesdisease.org/
National Veterinary Services Laboratory	Laboratory Certification Site: http://www.aphis.usda.gov/vs/nvsl/Labs/labcertification.htm
NYSCHAP – New York State Cattle Health Assurance Program	http://www.nyschap.vet.cornell.edu/module/johnes/johnes.asp
United States Animal Health Association	http://www.usaha.org
University of Wisconsin Johne's Information Center	http://www.johnes.org
University of Wisconsin Johne's Disease Veterinary Certificate Programs	http://vetmedce.vetmed.wisc.edu/jdvcp/
USDA-APHIS-VS–National Center for Animal Health Surveillance	http://www.aphis.usda.gov/vs/ceah/ncahs/index.htm

JD IN PRINT

Johne's Disease-related Publications (September – December, 2007)

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- Bannantine JP, Paustian ML, Waters WR, Stabel JR, Palmer MV, Li L, Kapur V. Profiling Bovine Antibody Responses to *Mycobacterium avium* subspecies paratuberculosis Infection Using Protein Arrays. *Infect Immun*. 2007 Nov 26; [Epub ahead of print] PMID: 18039835
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- Biet F, Bay S, Thibault VC, Euphrasie D, Grayon M, Ganneau C, Lanotte P, Daffé M, Gokhale R, Etienne G, Reyrat JM. Lipopentapeptide induces a strong host humoral response and distinguishes *Mycobacterium avium* subsp. paratuberculosis from *M. avium* subsp. *avium*. *Vaccine*. 2008 Jan 10;26(2):257-68. Epub 2007 Nov 20. PMID: 18068277
- Bull TJ, Gilbert SC, Sridhar S, Linedale R, Dierkes N, Sidi-Boumedine K, Hermon-Taylor J. A Novel Multi-Antigen Virally Vectored Vaccine against *Mycobacterium avium* Subspecies paratuberculosis. *PLoS ONE*. 2007 Nov 28;2(11):e1229. PMID: 18043737
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- Economou M, Pappas G. New global map of Crohn's disease: Genetic, environmental, and socioeconomic correlations. *Inflamm Bowel Dis*. 2007 Dec 19; [Epub ahead of print] PMID: 18095316
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4th Annual JDIP Conference Michigan State University

April 18-20, 2008

Call for Abstracts

The Johne's Disease Integrated Program (JDIP) is pleased to announce that its 4th Annual Conference will be held at the Henry Center at the Michigan State University in East Lansing, MI, April 18 – April 20, 2008. We are building on last year's very successful conference held in College Station, TX. As the only U.S. meeting focused solely on Johne's this conference is uniquely positioned to enable investigators and others working in the area to be updated on all of the Johne's disease related research being conducted.

We are working to make this another truly memorable meeting, and invite you to come join your scientific colleagues.

All investigators working in Johne's Disease research are invited to prepare and submit an abstract to the 4th JDIP Annual Conference. Poster sessions and oral presentations will include topics of interest to Johne's disease researchers and others working in the area., JDIP-related themes, including Johne's Disease epidemiology and the process of disease transmission; the development and implementation of new generations of diagnostic tests and methods for strain differentiation; improving our understanding of *Map* biology and mechanisms of pathogenesis; and, elucidating the immune response to *Map* and initiating programs to evaluate and develop new generations of vaccines will be highlighted.

We welcome submissions from non-JDIP funded projects as well as completed and ongoing projects funded through the JDIP program. Similar to previous years, travel awards for students and post-doctoral students will be available. Please check the box in the upper right corner of the form if you would like to be considered for a travel award.

You may use the form on the following page to submit your abstract. Complete the form, attach it to an email message with a copy of your brief (NIH-

style, form attached) biosketch, and send it electronically to the address shown below.

What to send:

- 1) Abstract (maximum 350 words) and non-technical summary;
- 2) Your contact information (name, organization, title, mailing address, e-mail address, telephone);
- 3) Preference for presentation (in poster session, and/or as a speaker); and,
- 4) Brief (NIH-style) biosketch of the primary author.

When to send:

Send your abstract by March 7, 2008. Presenters will be notified by March 14, 2008.

Where to send:

Submissions must be made via email. Please submit your abstract via email to: JDIPAbstracts@psu.edu with "JDIP Call for Abstracts" in the subject field of the email. For more information, please visit our website at: <http://www.jdip.org>, or contact Natalie Novak, JDIP Associate Administrator, at (814) 863-0340.



4th Annual JDIP Conference
The Henry Center, Michigan State University
April 18 – 20, 2008

PRIMARY AUTHOR INFORMATION:

Interest in competitive student Travel Award (check for yes):

Name/Title:

Organization:

Mailing address:

Email address:

Telephone:

I would prefer poster presentation, oral presentation, or either/no preference at the 4th Annual JDIP Conference.

ABSTRACT TITLE: _____

ABSTRACT (350 word maximum, please list co-authors first if applicable)

Funding Source: JDIP Other USDA Other (please specify) _____

NON-TECHNICAL SUMMARY (two sentence maximum)