

# IBASM

Volume 6, #3 Jan/Feb. 2004

## Message from the President- Jim Mitchell

Winter's greetings to all IBASM members! I hope you are all checking out our website at <http://users.ipfw.edu/merkel/IndianaASM.html>. Glenn



Merkel is updating this site regularly with news, meeting minutes and upcoming events. All future IBASM newsletters and event announcements will be

posted on this website.

We still need to identify persons for both the President-Elect and Educational Representative positions at the upcoming meeting. We have not received any nominations as yet and welcome any full-member to submit your name by email. The President-Elect is responsible for local arrangements at the meeting site including registration and room & board fees. The Educational Rep is responsible for providing details of poster abstract submission in the newsletter, coordinating

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The IBASM thanks the Indiana University School of Medicine-Fort Wayne for financially supporting the publication of this newsletter.

## Message from the President-Elect Jeanne Barnett

The spring meeting in Indianapolis will be Friday evening through Saturday afternoon, April 16-17, 2004. The meeting will be in Indianapolis at the Indiana University School of Dentistry. The University Place Conference Center and Hotel has been reserved for lodging. The cost for the lodging is \$115 for a single, \$130 for a double, and \$145 for a triple or quad (plus tax). University Place is within walking distance of the Dental School. We hope the central location will be suitable for all of you. The website <http://www.iusd.iupui.edu/depts/edu/sa/visit.htm> will take you to the Dental School website where there is a link to a map of campus. The Dental School is on Michigan Avenue west of University Place (shown as



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NEWS Letter

J. Mitchell's message (continued from page1)

judges and presenting student awards at the Spring meeting. Please contact me ([jkmitche@bsu.edu](mailto:jkmitche@bsu.edu)) asap if you are interested or have someone you would like to recommend for either of these positions.

We have three very exciting speakers for the upcoming spring meeting. The ASM Foundation speaker is Dr. Tim Ford, Professor & Chair of the Department of Microbiology at Montana State University and adjunct Professor at Harvard School of Public Health. His research interests have included source and drinking water microbiology, microbial cycling and transformation of pollutants, surface microbiology (biofilms), microbiologically influenced deterioration of materials, and microbial populations as biomarkers of environmental stress. Dr. Ford has both directed and participated in water quality related projects in the US, Canada, the UK, Honduras, Mexico, India and Russia. Current work in the US focuses on two areas: fate of the opportunistic pathogen, *Mycobacterium avium*, in drinking water biofilms, and the microbial interactions with pollutants in marine sediments from an EPA-designated Superfund site, New Bedford Harbor. International work is currently focused on source and drinking water quality in Russia, India and the Philippines. His presentation for the meeting is entitled, "Biofilms as Ideal Environments for Pathogen Survival and Proliferation; Knowledge Gaps and Key Areas for Research."

Our second speaker is Dr. Dominique Galli from the Department of Oral Biology, Indiana University School of Dentistry. The title of her presentation is: "Genetic Shareware: Its Role and Utility in the Study of Horizontal Gene Transfer in Biofilms". A better understanding of conjugative resistance gene acquisition in biofilms such as dental plaque, as well as the characterization of potential bacterial donors is necessary to develop new strategies that target conjugative gene transfer in order to break the antimicrobial resistance cycle. Dr. Galli is in the process of characterizing and modifying two genetic mobile elements which will facilitate the monitoring of gene transfer between various microorganisms, including Gram-negative and Gram-positive bacteria. A unique DNA inversion system has been identified on pVT745, a conjugative plasmid isolated from *Actinobacillus actinomycetemcomitans* (I refer to this bacterium as *Ac ac!*). *Ac ac* is a Gram-negative, facultative, capnophylic coccobacillus found in the oral cavities of healthy and periodontally affected individuals and has been implicated as a cause of localized juvenile and some forms of adult periodontitis, as well as other types of human infections, such as endocarditis and soft tissue abscesses.

Our third speaker is Dr. Charles Kulpa, Professor & Chair of the Department of Biological Sciences at the University of Notre Dame. He is also currently the president of the Southern Great Lakes section of the Society for Industrial Microbiology (SGL-SIM). Dr. Kulpa is currently developing molecular and microbial methods for the investigation of mixed cultures and for enhancing the activity of microbial processes in unique environments such as biodegradation of PAHs and removal of metals from waste streams. These studies utilize PCR, specific functional gene probes and primers, phylogenetic probes and primers, density gradient gel electrophoresis (DGGE), DNA sequencing as well as more traditional/microbial techniques. The goal is to understand microbial community structure and the activity of specific microbes within the community in a number of environmental situations, human made and natural. Dr. Kulpa is the recipient of the IBASM Academic Scientific Achievement Award and will present a seminar entitled, "From Toxic Waste to Environmentally Friendly (Green) Chemicals: Assessing Microbial Degradation and Transformation".

Jeanne will fill you in on registration, room & board and agenda for the upcoming meeting. Let's make this meeting as informative and outstanding as last year's! I look forward to seeing you all April 16-17 in Indianapolis.

Conference Center). Registration will be at the Dental School.

There will be a social hour with refreshments on Friday evening from 8:30 – 10:30 P.M. On Saturday, a continental breakfast with breads, fruit, coffee and juice will be available. A lunch buffet with wraps and a choice of vegetarian or meat filling, salad, chips, dessert and drink will be available. All posters will be set up in the Dental School. The poster session will be Saturday morning. Breakfast and lunch will be at the Dental School as well, so you can munch while you view the posters. The registration form is in this newsletter. Please complete it and return it to me by March 12, 2004. I will make the room reservations, but you will be responsible for payment at the Hotel. Send payments to me for registration and any meals you want.

The schedule for the meeting has been set as follows:

**Friday, April 16**

- 6:00 p.m. – Registration
- 7:00 p.m. – Dr. Tim Ford
- 8:30 – 10:30 p.m. – Social Time

**Saturday, April 17**

- 8:00 – Breakfast at the Dental School
- 8:30 a.m. – 11:30 – Poster set up and viewing
- 12:00 noon – Lunch
- 1:00 p.m. – Business meeting – election of officers
- 1:45 p.m. – Dr. Dominique Galli
- 2:30 p.m. – Dr. Charles Kulpa
- 3:15 p.m. – Presentation of awards
- 4:00 p.m. – Adjourn

The schedule is busy, but it will hopefully allow for meaningful interactions while limiting the stay to one night. We are not arranging for meals on Friday or Saturday evening to allow flexibility for each participant.

We're excited about the meeting and hope for good attendance again this year. The registration form is in this newsletter. Please remember the deadline is **March 12**.

**PLAN AHEAD!!!** The meeting for 2005 has been set. It will be at Abe Martin Lodge in Brown County State Park on April 15-17, 2005.



**IBASM Annual Meeting Registration & Room Reservation Form**  
**April 16 – 17, 2004**  
**Indiana University School of Dentistry**  
**University Place Hotel**

Please use this form to register for the meeting and reserve your room and meals at the spring meeting. The meeting registration is \$25 for regular members and \$5 for students. Remember, regular members and presenting students must be an IBASM member to attend the meeting. A separate form will be provided in the newsletter to pay annual membership fees. I will reserve rooms, but they will be billed individually and you will need either cash or a credit card at check-in. Room rates are \$115 for a single, \$130 for a double, and \$145 for a triple or quad (this does NOT include tax). Please provide all of the necessary information below and send the completed form with check payable to "Indiana Branch ASM" for the meals and registration by **March 12<sup>th</sup>** to:

Dr. Jeanne K. Barnett  
 Department of Biology  
 University of Southern Indiana  
 Evansville, IN 47712

Name(s) \_\_\_\_\_ # Adults \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ E-mail \_\_\_\_\_

If you need to find a roommate for the meeting, please e-mail [Barnett@usi.edu](mailto:Barnett@usi.edu) or contact Jeanne Barnett at (812) 465-1642.

Please check the appropriate spaces and send the total payment with your registration.

	Member (\$25)	Student (\$5)	Total
Meeting Registration	_____	_____	_____
Meals (# for each meal)	Brkft. (\$7.00)	Lunch (\$12.00)	
Meal Total	_____	_____	_____
<b>Total Enclosed</b>			_____

Room Required  
 Yes \_\_\_\_\_ No \_\_\_\_\_  
 Please list roommates below



# Student Posters

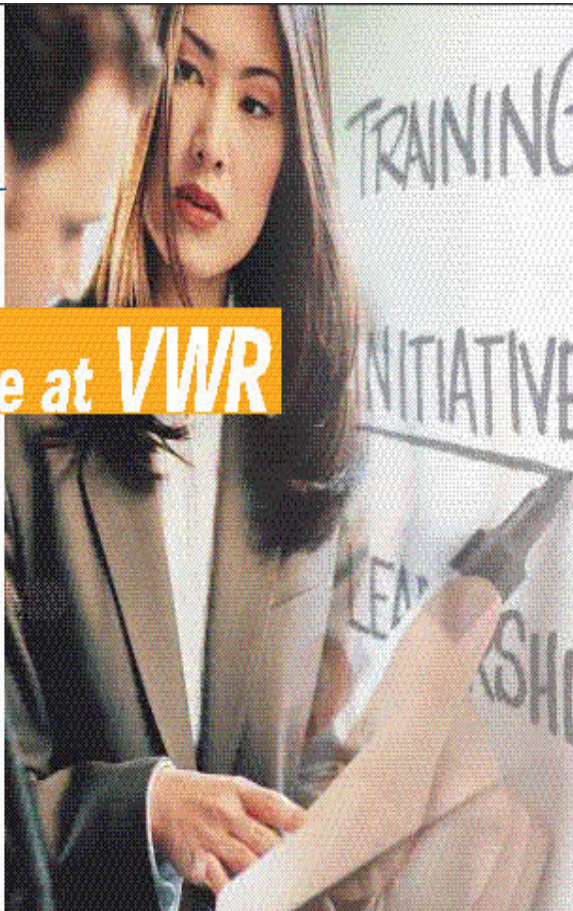

Abstract submission form/procedure is included in another portion of this newsletter. We will be utilizing the same 4x4 sq.ft. tri-fold styrofoam poster boards used at the last meeting. Tacks will be supplied but it wouldn't hurt to bring some extras in case we run short. Posters (high school, undergraduate and graduate) submitted for competition will be judged in 4 categories:

**Scientific thought:** Is there a clear hypothesis? Are the goals of the study defined? Were data correctly analysed? Were statistical analyses done? Did a logical conclusion result? (40 points)

**Creativity:** Was the topic original? Is there anything new in the approach to answering the question? Were new methods developed? (20 points)

**Thoroughness:** Was the study as complete as possible? Does the student understand the background material? Was there an introduction? Is the student aware of the drawbacks of the study? (20 points)

**Presentation (poster):** Were the results/conclusions clearly presented? Was the student's verbal expression clear and concise? Was the student able to answer questions? How well did the poster convey the information? (20 points)



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## ABSTRACT FORM FOR THE 2004 IBASM ANNUAL MEETING

Complete this form and submit the original and 1 copy by **March 1** and send to:

Dr. Christian Chauret, IU Kokomo, 2300 S. Washington St., Kokomo, IN 46904-9003

**ELECTRONIC SUBMISSIONS ARE PREFERRED** (e-mail abstracts to: cchauret@iuk.edu). Abstracts should be prepared according to the National ASM guidelines. All abstracts should include the title, authors, and institutional address. Abstracts will be published in the meeting program as submitted. **Limited funding will be available to subsidize lodging and food for student presenters.**

*Name and mailing address of presenting author:*

**Name:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**FAX:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**e-mail:** \_\_\_\_\_

**Subject Category:** \_\_\_\_\_

(i.e. pathogenesis, DNA viruses, etc.)

\* Are you a student presenter? Yes or No

\*\* Check if presenting author is a student competing for:

undergraduate \_\_\_\_, graduate \_\_\_\_, or high school \_\_\_\_. Student Awards (a short paper is required from the award winners)

**ABSTRACT:**

COPIES OF THE FOLLOWING JOURNAL ARTICLES CAN BE ACCESSED ONLINE AT: <http://www.asm.org/pcsrc/tip.htm>

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### **IDENTIFIED GENE MAY CONTRIBUTE TO SALMONELLA IN EGGS**

Researchers from the University of California at Berkeley have identified a gene that may allow salmonella bacteria to contaminate chicken eggs. Their findings appear in the December 2003 issue of the journal *Infection and Immunity*.

*Salmonella enterica* serovar Enteritidis in eggs is one of the leading causes of food-borne illnesses in the United States. *S. enterica* is the only strain able to invade eggs and survive despite the antibacterial defenses found in egg whites which limit the growth and survival of other bacteria.

In the study, *S. enterica* was combined with albumen from egg whites and then monitored for survival. After confirming that *S. enterica* was able to overcome exposure to the albumen, the researchers began identifying genes that might contribute to the resistance. One of the genes, identified as *yafD*, had the ability to repair DNA damage caused by the albumen enabling the bacterium to thrive.

“We report here the identification of *yafD* as a gene essential for the resistance of *S. enterica* serovar Enteritidis to egg albumen,” say the researchers. “We provide evidence that *YafD* may play a role in the repair of DNA damage caused by egg albumen and hence may facilitate the survival of *S. enterica* serovar Enteritidis in chicken eggs.”

(S. Lu, P.B. Killoran, L.W. Riley. 2003. Association of *Salmonella enterica* serovar enteritidis *YafD* with resistance to chicken egg albumen. *Infection and Immunity*, 71. 12: 6734-6741.)

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### **DIFFERENT BACTERIA CAUSE DISEASE IN GRAPES/ALMONDS**

Scientists at the University of California, Berkeley, have discovered that while Pierce’s disease of grapevines (PD) and almond leaf scorch (ALS) are caused by the same species of bacteria, the bacteria are two distinctly different strains. They report their findings in the December 2003 issue of the journal *Applied and Environmental Microbiology*.

Pierce’s disease, where bacteria cause blockage in the roots denying water and nutrients to the grapevine canes and leaves, and ALS, which also results from congestion in the water flow, are both believed to be caused by the organism, *Xylella fastidiosa*.

“PD and ALS have long been considered to be caused by the same strain of this pathogen, but recent genetic studies have revealed differences among *X. fastidiosa* isolated from these host plants,” say the researchers.

In the study, *X. fastidiosa* isolates from grapes and almonds, previously thought to be identical, were tested to see if almond strains could cause PD in grapevines and vice versa. The researchers determined that the organisms are not biologically interchangeable.

“Our results show that genetically distinct strains from grapes and almonds differ in population behavior and pathogenicity in grapes and in the ability to grow on two different media,” say the researchers.

(R.P.P. Almeida, A.H. Purcell. 2003. Biological Traits of *Xylella fastidiosa* strains from grapes and almonds. *Applied and Environmental Microbiology*, 69. 12: 7447-7452.)

**Selected Highlights from the Journals of the ASM, January 2004** (from ASM Tipsheet)

COPIES OF THE FOLLOWING JOURNAL ARTICLES CAN BE ACCESSED ONLINE AT: <http://www.asm.org/pcsrc/>

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**BACTERIA MAY SURVIVE SUBZERO TEMPERATURES OF WINTERTIME SEA ICE**

Researchers from the University of Washington, Seattle and the University of Alaska Fairbanks have found bacterial activity in arctic wintertime sea ice and may attribute its survival to particle or surface attachment. Their findings appear in the January 2004 issue of the journal Applied and Environmental Microbiology.

Previous studies pertaining to bacterial activity in sea ice have been conducted during the “warm” sunlit season with results drawn from melted ice. In this study, samples of arctic sea ice were collected from Alaska during winter months and maintained at subzero temperatures while being tested for bacterial activity of Cytophaga-Flavobacteria-Bacteriodes (CFB) and Archea. Researchers found the existence of CFB and Archea in wintertime sea ice to be largely associated with attachment to surface particles, with the percentage of attachment increasing as temperatures decreased.

“We have identified in this study one possible strategy for continued bacterial activity in wintertime sea ice: association with particles or surfaces,” say the researchers. “The observation of active bacteria at -20 degrees celcius suggests that wintertime sea ice is more than a refugium for temporarily preserved life and brings the discussion of limits of life on Earth to a different level.”

(K. Junge, H. Eicken, J.W. Deming. 2004. Bacterial activity at -2 to -20 in arctic wintertime sea ice, 70. 1: 550-557.)

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**PET SNAKES MAY BE SOURCE OF SALMONELLA**

German researchers have determined that exotic reptiles maintained as pets may be responsible for an increase in Salmonella cases in humans. Their findings appear in the January 2004 issue of the journal Applied and Environmental Microbiology.

“Children under the age of 10 years and immunocompromised people seem to be especially prone to infections with reptile-associated Salmonella spp.and often experience severe clinical courses, including fatalities due to septicemia and meningitis.”

In the study, fecal samples were collected from pet snakes and tested for the presence of Salmonella. Strains of *Salmonella enterica* appeared in eighty-one percent of the samples. Although it is unclear how these snakes are infected with the bacteria, researchers believe it is through contact with contaminated feces.

“Our results indicate that very high percentages of snakes are colonized with *Salmonella* spp.,” say the researchers. “To avoid transmission, strict hygienic precautions should be applied when reptiles are handled.”

(M. Schroter, P. Roggentin, J. Hofmann, A. Speicher, R. Laufs, D. Mack. 2004. Pet snakes as a reservoir for *Salmonella enterica* subsp. diarizonae (serogoup IIIb): a prospective study, 70. 1: 613-615.)

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# 2004 Membership Application/Renewal

*If you have not paid your dues for 2004, you can do it now. Dues are \$15.00 for non-students and \$5.00 for students (per year). Please return the completed form with check, payable to IBASM, to*

Dr. Christian Chauret  
Biological and Physical Sciences  
Indiana University Kokomo  
2300 South Washington Street  
Kokomo, IN 46904-9002  
Phone: (765) 455-9290; Fax: (765) 455-9371; email: [cchauret@iuk.edu](mailto:cchauret@iuk.edu)

Please check:

- New Member Application
- Renewal for 2004
- Student Member for 2004
- Full Member for 2004

Name:

Current Position & Title:

Institution:

Mailing Address:

Phone:

Email:

Fax:

National ASM Member #:

## Background

Highest Degree:

Institution:

Professional Interests:

## **2003-2004 IBASM OFFICERS**

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**Indiana Branch American Society for Microbiology**

c/o Glenn J. Merkel, Ph.D.

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**TO:**

