

# THE SCOPE

A publication of the Michigan Branch of the American Society for Microbiology

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## President's Report

*Joan Rose, Sonia Tiquia*

It will not be long until we are gathering at University of Michigan - Dearborn for our fall conference on Friday, October 7 and Saturday, October 8. The meeting will feature a very exciting program on the parallel advances we are currently witnessing in many research areas of symbiosis and the progress being made in uncovering the nature of symbiotic interactions, i.e., vertebrate-microbe symbiosis, anaerobic methane-oxidizing consortia, marine worms that possess endosymbionts instead of a digestive tract, amino acid-producing endosymbionts of aphids, prokaryotic endosymbionts living within a prokaryotic host within mealybugs, endosymbionts of an insect vector of human disease and a photosynthetic sea slug that steals chloroplasts from algae. These developments promise to provide new paradigms in "Microbial Symbioses and Interspecific Evolution" – the theme of MI-ASM Fall 2011 meeting.

Friday night's keynote speaker, Dr. Todd Ciche from the Department of Microbiology and Molecular Genetics at Michigan

State University will speak about "Cooperation that kills: the insect pathogenic symbiosis between *Photorhabdus luminescens* and nematodes".

Saturday's program kicks off

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## Corporate Partners

BD Diagnostics  
Corning  
Coy Laboratory Prod.  
Dot Scientific  
EMD  
Emergent  
Fisher Scientific  
Hardy Diagnostics  
Innovative Solutions  
Jade Scientific  
Mager Scientific  
Midwest Scientific  
Morton Publishing  
NSF International  
Pall Life Sciences  
Pfizer Animal Health  
Promega  
Remel  
Sigma Aldrich  
USA Scientific  
Whatman

# Microbial Symbioses and Interspecific Evolution

October 7-8, University of Michigan - Dearborn

## Friday, October 7<sup>th</sup>

5:00 - 6:00 pm	<b>Plenary Session 1</b> <b>Todd Ciche, PhD</b> Department of Microbiology and Molecular Genetics Michigan State University <b>“Cooperation that kills: the insect pathogenic symbiosis between <i>Photorhabdus luminescens</i> and nematodes”</b>	Dining Room D, South
6:00 – 7:30 pm	Student Mixer/Reception	Dining Room D, South
7:30 – 9:30 pm	Board Dinner	Guilio and Sons (Hyatt)

## Saturday, April 9<sup>th</sup>

8:00 - 8:50 am	Breakfast and Registration	Quad E, North Building
8:50 - 9:00 am	Introduction and Welcome	Quad E, North Building
9:00 - 10:00 am	<b>Plenary Session 2</b> <b>Marvin Whitely, Ph.D.</b> Department of Molecular Genetics and Microbiology The University of Texas at Austin <b>“Sociomicrobiology”</b>	Quad E, North Building
10:15 - 11:15 am	Poster/Vendor viewing Coffee break	Hallway, North Building
11:30 - 12:30 pm	<b>Student Speakers</b>	Quad E, North Building
12:30 - 1:30 pm	Lunch and Business Meeting	Quad E, North Building
2:00 - 3:00 pm	<b>Plenary Session 3</b> <b>Michele Shuster, PhD</b> Biology Department New Mexico State University <b>“K-12 Outreach: What Works (and How Do We Know?)”</b>	Quad E, North Building
3:00 - 4:00 pm	<b>Plenary Session 4</b> <b>Paul Dunlap, PhD</b> Department of Ecology and Evolutionary Biology University of Michigan <b>“Fish – luminescent bacterium symbiosis”</b>	Quad E, North Building
4:00 – 4:15 pm	Final Notes/Adjourn	Quad E, North Building
4:30 pm	Board Meeting	Quad E, North Building

More information for the meeting including directions and hotels, can be found online at <http://www.mi-asm.org/>

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with Dr. Marvin Whitely from the Department of Molecular Genetics and Microbiology at The University of Texas at Austin speaking about “Sociomicrobiology”.

Our second speaker on Saturday will be Dr. Michele Shuster from the Biology Department at New Mexico State University. She will talk with us about her educational focus and outreach to K-12. “K-12 Outreach: What Works (and How Do We Know?)”.

Our final speaker will be Dr. Paul Dunlap from the Department of Ecology and Evolutionary Biology at University of Michigan. He will discuss his work with fish symbiosis, “Fish – luminescent bacterium symbiosis”.

As in past years, there will be an optional board dinner for Board members and a social gathering for students on Friday night as well as a formal lunch on Saturday which will double as the Branch business meeting (see page 2 for details). Several corporate partners will also be on hand to answer questions and display their new products. Please register and submit your abstracts now; it is your presence at these meetings that make them so vital!

Please visit the Michigan ASM website for further details and lodging options, <http://www.mi-asm.org>.

## Spring Meeting 2012

*Michael Cohen?*

Plans are in the works for our Fall meeting at ????? in ??????. Can you tell we are still trying to work it out? It may be at the University of Michigan in Ann Arbor. Stay tuned for updates at the meeting and on the website.

## Waterborne Disease May Amplify in an Increasingly Urbanized World without Attention Paid to Safe Water

*Joan Rose*

Under the theme “*Responding to Global Changes: Water in an Urbanizing World,*” World Water Week 2011 was held August 21-27, 2011 in Stockholm. The World Water Week has been the annual focal point for the globe’s water issues since 1991. Water security is one of the major concerns for cities in an increasingly urbanizing world where in the future 6.8 billion people will live in urban centers representing 95% of the global population

(World Bank, 2009). Without abundant and safe water, contamination will increasingly wreak havoc on urban communities causing many illnesses, outbreaks and deaths. The types of waterborne pathogens in today’s world is growing and the transmission seems to be more complicated for both new and emerging pathogens (norovirus, *E. coli* 0104H4 and *Cryptosporidium*) and those ancient pathogens (*Vibrio cholera*, poliovirus) which are often major threats particularly for the young, elderly, and immunocompromised which

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## Spr 2011 Awards

### Best Poster

**Petra Kohler**, Western Michigan University, graduate

**Alexander Roll**, Michigan Technological University, undergrad

### Best Talk

**Vanessa Revindran**, Western Michigan University, graduate

**Brian Panzl**, Michigan State University, undergrad

**Elected Officers**

- PRESIDENT, Joan B. Rose**, Michigan State University, [rosejo@msu.edu](mailto:rosejo@msu.edu)
- PRESIDENT- ELECT, Audra Swarthout**, Delta College, [audraswarthout@delta.edu](mailto:audraswarthout@delta.edu)
- PAST PRESIDENT, John Geiser**, Western Michigan University, [john.geiser@wmich.edu](mailto:john.geiser@wmich.edu)
- SECRETARY, Jennifer Hess**, Aquinas College, [hessjen@acuinas.edu](mailto:hessjen@acuinas.edu)
- TREASURER, Alan Hudson**, Wayne State University, [ahudson@med.wayne.edu](mailto:ahudson@med.wayne.edu)
- COUNCILOR, Susan Bagley**, Michigan Technological University, [stbagley@mtu.edu](mailto:stbagley@mtu.edu)
- ALTERNATE COUNCILOR, Steve Gorsich**, Central Michigan University, [gorsi1sw@cmich.edu](mailto:gorsi1sw@cmich.edu)

**Appointed Officers**

- EDUCATIONAL CHAIR, Kris Baumgarten**, [KBaum11944@aol.com](mailto:KBaum11944@aol.com)
- CORPORATE LIAISON, Michael A. Cohen**, [mbcman@charter.net](mailto:mbcman@charter.net)
- UNIVERSITY and COLLEGE LIAISON, Jeff L. Ram**, Wayne State University, [jeffram@med.wayne.edu](mailto:jeffram@med.wayne.edu)
- NEWSLETTER EDITOR, John Geiser**, Western Michigan University, [john.geiser@wmich.edu](mailto:john.geiser@wmich.edu)
- WEBSITE MAINTENANCE, John Geiser**, Western Michigan University, [john.geiser@wmich.edu](mailto:john.geiser@wmich.edu)
- ARCHIVE REPRESENTATIVE, Richard Bell**, Macomb Community College, [bellr@macomb.edu](mailto:bellr@macomb.edu)
- COMMUNITY COLLEGE LIAISON, Audra Swarthout**, Delta College, [audraswarthout@delta.edu](mailto:audraswarthout@delta.edu)

**Board Members-at-large**

- Kris Baumgarten**, Delta College, [KBaum11944@aol.com](mailto:KBaum11944@aol.com)
- Mary Ann Cardani**, UM-Flint (retired), [mcardani@comcast.net](mailto:mcardani@comcast.net)
- Dan Clemans**, Eastern Michigan University, [dclemans@emich.edu](mailto:dclemans@emich.edu)
- Carol Hurlburt**, Lansing Community College, [hurlbuc@lcc.edu](mailto:hurlbuc@lcc.edu)
- Ola Olapade**, Albion College, [oolapade@albion.edu](mailto:oolapade@albion.edu)
- Britt Ranson Olson**, Lake Superior State University, [branson@lssu.edu](mailto:branson@lssu.edu)
- Silvia Rossbach**, Western Michigan University, [Silvia.Rossbach@wmich.edu](mailto:Silvia.Rossbach@wmich.edu)
- Michael Ryan**, Ferris State University, [ryanm@ferris.edu](mailto:ryanm@ferris.edu)
- Jim VandenBosch**, Eastern Michigan University, [jim.vandenbosch@emich.edu](mailto:jim.vandenbosch@emich.edu)
- Judith Whittum-Hudson**, Wayne State University, [jhudson@med.wayne.edu](mailto:jhudson@med.wayne.edu)

**Student Chapters**

Check them out online, <http://www.mi-asm.org>.  
Most have links to their own websites.

- Central Michigan University
- Eastern Michigan University Microbiology Club
- Grand Valley State University Microbiology Club
- Michigan State University Microbiology Club
- Michigan Technological University Microbiology Club
- Tri-Cities Microbiology Club
- University of Michigan - Dearborn
- University of Michigan - Flint
- Wayne State University
- Western Michigan University

**\*\*\* Student Chapters,  
remember to apply for  
funding to help defray  
costs of attending  
Meetings!**

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make up 25% of our communities.<sup>1</sup>

Recent investigations of DNA by researchers at University College, London, the University of Oxford and Uppsala University in Sweden, reported that infectious disease became more important after the advent of the urbanization adding to the evidence that infectious disease grew throughout the world because of urbanization.<sup>2</sup> In urban populations, waterborne pathogens spread rapidly in cities without adequate wastewater and drinking water treatment such as in Haiti, and outbreaks continue to occur throughout the modern world. For example, in the USA the largest outbreak ever documented impacted an estimated 400,000 in Milwaukee WI, USA in 1993<sup>3</sup> and in Nokia, Finland more than 15,000 people were infected with *Salmonella* and *Campylobacter* following the contamination of drinking water in the town of Nokia 2007.<sup>4</sup>

Scientists at the Center for Advancing Microbial Risk Assessment (Michigan State University) have found that water disinfection reduces risk to a community for

*Salmonella* (typhoid), *Vibrio* (cholera), viruses and *Giardia* (gastroenteritis) by 100 to 1000 times.<sup>5,6,7</sup> Yet if even 5% of the population does not have access to safe water in the community then over time due to the contagious nature of these waterborne pathogens, disease spreads through the populace.

The future for urban communities in achieving water security will require water recycling to recovery water, nutrients and energy and better implementation of technology to ensure a multiple barrier approach including watershed protection, treatment and safe distribution of the water to control these waterborne pathogens.

<sup>1</sup> Gerba, C.P., Rose, J.B., and Haas, C.N. 1996. Sensitive Populations: Who is at the Greatest Risk? *Internat. J. of Food Microbiol.* 30: 113-123

<sup>2</sup> Barnes Ian, Duda Anna, Pybus Oliver G.; et al., 2011. Ancient Urbanization Predicts Genetic Resistance to Tuberculosis, *Evolution*, 65(3): 842-848

<sup>3</sup> Finland - *Salmonella* found in

tainted water patients 04 Dec 2007, [link](#).

<sup>4</sup> MacKenzie, W.R., Hoxie, N.J., Proctor, M.E., Gradus, M.S., Blair, K.A., Peterson, D.E., Kazmierczak, J.J., Addiss, D.G., Fox, K.R., Rose, J.B., and David, J.P. 1994. "A Massive Outbreak in Milwaukee of Cryptosporidium Infection Transmitted Through the Public Water Supply." *New Engl. J. Med.* 331(3): 161-167.

<sup>5</sup> Coulliette, A.D., Peterson, L.A., Mosberg, J.A., and Rose, J.B. 2010. Evaluation of a New Disinfection Approach: Efficacy of Chlorine and Bromine Halogenated Contact Disinfection for Reduction of Viruses and Microcystin Toxin. *American Journal of Tropical Medicine and Hygiene.* 82(2):279-288.

<sup>6</sup> McLennan, S.D., Peterson, L.A. and Rose, J.B. 2009. Comparison of Point-of-Use Technologies for Emergency Disinfection of Sewage-Contaminated Drinking Water. *Applied and Environmental Microbiology* Vol 75 (22): 7283-7286.

<sup>7</sup> Enger, K and Rose, JB. 2011. CAMRA, [rosejo@msu.edu](mailto:rosejo@msu.edu), MSU

## Student Info.

*John Geiser*

### Student Chapters

Currently the branch sponsors ten student chapters. This makes us one of the most student-oriented branches that ASM has. The following Schools and Universities throughout the State have student chapters:

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See you at  
MI-ASM

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Michigan Tech, Central Michigan, Western Michigan, Eastern Michigan, Michigan State, UM-Flint, UM-Dearborn, Wayne State, Delta College and Grand Valley State University. Student chapters are a great place to meet up with like-minded people. If you haven't already checked yours out, please do so; you will not regret it. No chapter at your school? Then maybe you are the one to begin a new chapter! Contact any board member to learn more about starting your chapter. We would be happy to work with you to make this a possibility.

*Research and Travel awards*

Through the generosity of Dr. Philipp Gerhardt and his wife Vera, the Michigan Branch of the American Society for Microbiology is able to provide substantial support for student research and travel. The Gerhardt Endowment is used to enhance the microbiology research training of undergraduate and early stage graduate students within the State of Michigan. Information for applying for funding can be found on the branch website,

<http://www.mi-asm.org>.

We encourage all of our students to apply for these

resources. Feel free to discuss it with any board member or your chapter advisor.

## Finance Report

*Alan Hudson*

Our current bank account balance is \$16,296. We have two CD's that are currently collecting interest.

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