In This Issue

The National Molecular Subtyping Network for Foodborne Disease Surveillance

PulseNet News

State & Local Public Health Laboratories in the United States and PulseNet Canada

VOLUME 2 • ISSUE 3 • SUMMER 2003

Update Meeting '03

Adam Toguchi, Microbiologist and Suzanne Barth, Section Chief, Microbiological Investigations, Texas Department of Health, Austin, TX

From April 29th to May 2nd, the Texas Department of Health was host of the 7th Annual PulseNet Update Meeting in San Antonio. Approximately 150 people from around the country and the world gathered to discuss molecular subtyping, information exchange, and software analysis. The meeting served to remind us—city, county, and state public health labs—of our larger role in infectious disease cluster detection, communications with other state and federal agencies, and outbreak investigation. After Tuesday evening presentations by Dr. Jocelyne Rocourt (World Health Organization), and Cindy Luey (Public Health Laboratory Centre, Hong Kong), that touched on global public health issues, the Bio-Rad-sponsored roof-top reception, with stunning views and an array of tasty hors d'oeuvres, beautifully welcomed all to a meeting that would refocus our thinking towards "Back to Basics" issues in PulseNet.

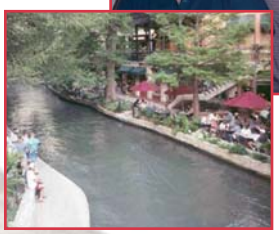
During the first Wednesday morning session, Collette Fitzgerald introduced the theme of the meeting, stressing that it was "our meeting" and that our participation was essential; Bala Swaminathan discussed PulseNet accomplishments and challenges (emphasizing the need for timely submission of PFGE patterns to the databases); and Sharon Rolando discussed the annual report survey. Dr. Garry McKee, the Administrator of USDA's Food Safety Inspection Service (FSIS), delivered the keynote address about FSIS's use of PulseNet data.

After the break, David Boxrud talked about how the Minnesota PulseNet laboratory interacts with epidemiologists. He described their effective action plan involving daily reports and morning meetings that facilitate shared responsibility, accountability, and recognition. Denise Toney, from the Virginia laboratory, delivered a presentation on the importance of timely laboratory subtyping and its effect on the accuracy of epidemiological interviews in light of the limitations of human memory. She discussed the *E. coli* turnaround times that her laboratory achieves, and the realities of practicing real-time PFGE subtyping. Jeffrey Massey, the final speaker of the morning session discussed issues concerning freedom of information requests, recounting relevant examples from his experiences at the Michigan laboratory.

After lunch (co-sponsored by the Utah Department of Health), Shelley Rankin described an intriguing study that used antibiotic susceptibility testing and molecular subtyping to identify *Salmonella* Newport in Pennsylvania animals. She presented a model indicating that an MDR-AmpC replicon may be spreading through different *S.* Newport strains. ***(Continued on page 2)***

A Friendly Reminder: PulseNet is Not All Work

Wayne A. Chmielecki, Microbiologist 3, Pennsylvania Department of Health, Lionville, PA



Wanda, Wayne, Christi, and Cindy (above)
The Riverwalk in San Antonio (right)

Wow! Another PulseNet Annual Update Meeting (#7) gets placed in the history book of "The National Molecular Subtyping Network for Foodborne Disease Surveillance." One month has passed since this memorable event. It's not every day that you can attend an international conference and affectionately be labeled a "PulseNut"! (Thanks Laura for volunteering to become our spokesperson!)

I recently shared with the PulseNet team some pictures that were taken while at the Update conference. I was pleasantly surprised to see how these pictures and my comments had sparked an interest. (Swami caught wind of it–need I say any more!!) In any event, my comments were sincere and will become evident as you read on. I would liken the pleasure these pictures instilled to that of bursting rays of sunlight showing through the final remains ***(Continued on page 3)***

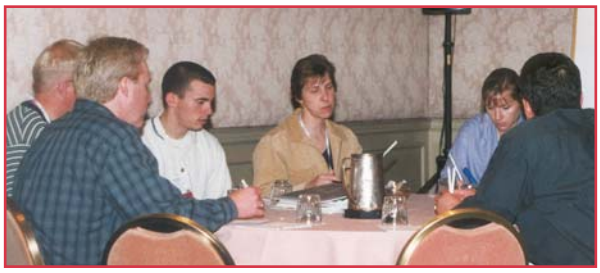
This model offers a possible explanation of the rapid rise in multiple-drug resistance in such strains. Next, the PulseNet database team at CDC described the herculean task of optimizing the PulseNet databases for cluster detection and outbreak investigation. Interwoven into this session were presentations by state public health labs. CDC's Susan Van Duyne began by discussing the success of the *Salmonella* WebBoard conference and addressing questions about subtyping prioritization. Dianna Schoonmaker-Bopp from the New York State laboratory followed with a talk about a multi-state outbreak of MDR *Salmonella* Newport associated with ground beef consumption. Jennifer Kincaid from CDC and Terry Kurzynski from the Wisconsin laboratory described *E. coli* cluster analysis using an example from 2002 where multiple strains of *E. coli* were isolated from patients during a ground beef-associated outbreak. Adam Beall from CDC and Naomi Barker from the Maryland laboratory shared their experiences with *Shigella* outbreak investigations. Beall's presentation highlighted an incident at a British West Indies resort where juice (*mixed with a short spoon that allowed the food handler to contaminate the juice*) was suspected as the vehicle of transmission. Barker discussed a widespread *Shigella* outbreak that swept across Baltimore daycare centers, but eventually diminished after most children were infected and, thus, protected. Kelley Hise from CDC and Stacey Kinney from the Connecticut laboratory used a multi-state *Listeria* outbreak that occurred in 2002 to demonstrate the importance and effectiveness of the PulseNet database and WebBoard. In their example, isolates from both the environment and intact product were found to have PFGE patterns that were indistinguishable from the outbreak strain.

Christine Steward and Jennifer Kincaid began the second afternoon session with presentations on certification and proficiency testing. The Wednesday agenda culminated with a breakout session where attendees gathered according to area lab assignments to discuss (1) redefining the role of the area labs and (2) finding ways for all labs to meet goals and expectations set by CDC. We, in the Texas lab, thoroughly enjoyed talking with the other laboratories in our area, and we found the intimate, dynamic interaction to be a welcome variation in the schedule and agenda. Everybody constructively contributed to the discussion by proposing a variety of ways to address both topics.

Thursday morning began with presentations by Karen Jinneman and Janelle Johnson of FDA and James Jones and Walter Hill of USDA that summarized current activities and changes that allow for effective use of PulseNet data. Next, Shannon Hall from Bio-Rad presented the nuts and bolts of PFGE, and CDC's Mary Ann Lambert-Fair described numerous ways to troubleshoot and optimize PFGE gels. (Alas, will we ever be able to generate a practically perfect "*Mary (Poppins) Ann*" gel?) The second breakout session followed the theme set by Shannon and Mary Ann, covering issues such as troubleshooting, methodology, and equipment concerns.

Peter Gerner-Smidt kicked off the Thursday afternoon session with a valuable presentation about comparing PFGE profiles that contain minor band differences. He used actual examples to support his view, stating that (1) the observed difference may be artifactual, (2) pattern variation may occur within a single strain during an outbreak, and (3) only 100% matches should be considered in the case definition of an epidemiological investigation (unless there is a very good reason for not doing so). Next, Susan Hunter talked about improvements to the PulseNet WebBoard and databases, and Paul Vauterin from Applied Maths demonstrated some new and old BioNumerics features.

Preceding the final breakout session, Laura Kornstein delivered a passionate, rousing speech about ***(Continued on page 5)***



Minnesota area lab breakout session, (top left). Texas area lab breakout session, (top right). The West fighting to keep their title, (bottom left). The East battling to be PulseNuts, (bottom right).

2004 PulseNet Update Meeting to Be Held in San Diego, CA

Sharon Rolando MHS, MT(ASCP) PulseNet Program Manager, Association of Public Health Laboratories, Washington, DC

The 8th Annual PulseNet Update Meeting will be held the week of April 26, 2004, at the Holiday Inn on the Bay in San Diego, California. The co-hosts for this meeting will be the California State Public Health Laboratory, the Los Angeles County Public Health Laboratory, and the San Diego County Public Health Laboratory. APHL and CDC especially thank Eleanor Lehnkering and Klaus Steurmann for their assistance in choosing the venue for our meeting. We look forward to seeing all of the PulseNet participants at the meeting in San Diego.

And the PulseStar Awards go to...

Sharon Rolando MHS, MT(ASCP)
PulseNet Program Manager, Association of Public Health Laboratories, Washington, DC

Congratulations to the three winners of the 2003 PulseStar Awards: Dianna Schoonmaker-Bopp from the New York State Department of Health (Wadsworth Center), Dr. Paul Fiorella from the Florida Department of Health Bureau of Laboratories, and Wanda Manley from the Wyoming State Public Health Laboratory. The PulseStar Award is presented annually by FDDLS/CDC and APHL to those PulseNet participants whose efforts have contributed significantly to the advancement of PulseNet activities in public health during the previous year. Each award winner was presented with a plaque and a check for $500.00 from APHL at the 2003 PulseNet Update Meeting in San Antonio, Texas.

PulseStar Award Winner Dianna Schoonmaker-Bopp, New York City Department of Health

PulseStar Award Winner Paul Fiorella, Florida Bureau of Laboratories

PulseStar Award Winner Wanda Manley, Wyoming Public Health Laboratory

Dianna Schoonmaker-Bopp has been active in PulseNet activities since 1998. She works closely with the New York City Department of Health in investigating outbreaks of foodborne illness, and she can always be relied on to post relevant information about New York clusters to the PulseNet WebBoard in a timely fashion. In 2002, her data was instrumental in the investigation of the multi-state outbreak of listeriosis in the northeast. We also congratulate Dianna on her authorship of an article in the January 2003 issue of the *Journal of Clinical Microbiology* that describes an outbreak of both *E. coli* O157:H7 and *Campylobacter jejuni* in upstate New York.

Paul Fiorella collaborates effectively with various sections of the Florida Bureau of Laboratories and provides necessary information to the epidemiologists at the Florida Department of Health. In addition to assisting epidemiologists with foodborne disease investigations, Paul's work has helped us understand the transmission of *Neisseria meningitidis* among patients in a meningitis outbreak, resolved cross-contamination events in mycobacteriology laboratories, and shown connections between patients in nosocomial infections. Paul keeps excellent and detailed records of the work he completes and reports this information to the Florida Department of Health on an annual basis.

Wanda Manley single-handedly developed the first molecular biology laboratory at the Wyoming Public Health Laboratory. She has excelled in her PulseNet certification and proficiency testing, and contributes to comprehensive state surveillance for enteric diseases in human and veterinary populations by working closely with the Wyoming Veterinary and Agriculture Laboratories. Wanda's work was highly valued by her supervisors in 2002, when numerous state outbreaks tripled the number of PFGE isolates that were processed. Wanda worked many additional hours in order to repeatedly respond to emergency requests.

APHL and CDC/FDDLS appreciate the on-going efforts of all members of the PulseNet network. Your timely and conscientious work continues to help in the investigation and prevention of foodborne illness.

How would you like to receive the PulseNet newsletter?

Currently, everyone who is subscribed to receive the *PulseNet* quarterly newsletter receives a hard copy in the mail. The newsletter is also available electronically on the WebBoard and on the PulseNet website **(www.cdc.gov/pulsenet/news.htm).** If you would like to stop receiving the hard copy version and either receive the electronic version via e-mail or access it via the website or the WebBoard, please send your request to the PFGE inbox at pfge@cdc.gov with the subject line: PulseNet Newsletter.

Continued from the cover

of a passing storm. They were pictures of the Alamo and cactus plants in bloom, boat rides along the Riverwalk, and best of all "old" friends. We have all probably heard the old clichè that "A picture is worth a thousand words." I think a better clichè would be "A picture paints a thousand memories." All it takes is a simple picture, "a thin slice of time caught on paper," to trigger hours of enjoyable memories of time spent in a certain location and/or with the friends we make along the way.

One such event happened to me when I received an email from Cindy Luey containing a picture that was taken at the recent Update Meeting. It was a picture taken with Cindy's tiny digital camera that included four happy faces. (Cindy Luey - Hong Kong, Wanda Manley - Wyoming, Christi Clark - West Virginia, and Wayne Chmielecki - Pennsylvania). What the picture didn't show (except to the four of us) was three years worth of memories. There were memories of that first PFGE training course given by CDC in Decatur, Georgia when we met one another for the first time. The memories of having our heads stuffed with all there was to know about the BioNumerics software. (We couldn't understand why our heads would hurt at the end of a days session.) We learned a lot! We even learned that if something didn't work in BioNumerics the way you would like it to, Paul would write a "new" program during lunch! We would also remember the many hours during breaks, at lunch, or over a "heavy" hors d'oeuvre reception and, recently, during break out sessions. Now let's throw in some non-work-related memories like sitting in on a House Congressional meeting in the Capital at Richmond, VA, or a trip to Cabela's and dinner a Joe's Crab Shack in Ann Arbor, MI, and a boat ride along the Riverwalk in San Antonio, TX. Can you now see the memories in that picture, possibly a picture of your own and similar memories?

PulseNet is more than a bunch of "matching bands" and "bugs"! It's more than just people working together on a common cause. It's also about "PulseNuts" becoming friends with people from around the world, and creating memories that will last a lifetime. My only regret is that I wasn't a "Charter Member"! CDC

PulseNet CDC offers BioNumerics Training in San Antonio

Susan B. Hunter, MS, Chief, PulseNet Database Administration Team, Centers for Disease Control and Prevention, Atlanta, GA

Prior to and during the 7th Annual PulseNet Update Meeting in San Antonio, Texas, there were several opportunities for training and problem solving, as well as questions and answer sessions related to BioNumerics for PulseNet participants. Two one and a half day workshops, beginning and advanced level training for PulseNet participants, were held on the Monday and Tuesday preceding the meeting. For both workshops, Brenda Brown, who is responsible for computer network support for PulseNet, installed BioNumerics and PulseNet client scripts on each student computer, as well as data and example exercises. She also set up server databases for both workshops, to simulate realistic training exercises for the students.

Beginning BioNumerics Workshop:

Faculty for the beginning workshop consisted of PulseNet database team members: Kelley Hise, Jennifer Kincaid, Susan Van Duyne, Peter Gerner-Smidt, Brenda Brown and Adam Beall. Twenty-one participants from PulseNet participating U.S. public health laboratories and food regulatory agency laboratories, as well as one participant from the International Centre for Diarrhoeal Disease Research (ICDDR) in Bangladesh participated. The participants learned the steps necessary to analyze a gel tiff image, link the lane to text information in their local database, and submit the pattern and text information to the appropriate PulseNet online database. Participants also learned to perform comparisons and searches.

Advanced BioNumerics Workshop:

The faculty for the advanced workshop consisted of Susan Hunter, Kristy Kubota and Lewis Graves from the CDC, along with Drs. Luc and Paul Vauterin from Applied Maths. Dr. Paul Fiorella from the Florida Public Health Laboratory and Lem del Rosario and Kyle Kingsley from the Applied Maths U.S. office located in Austin, Texas, also assisted. Nineteen participants from 14 PulseNet participating U.S. public health laboratories and food regulatory agency laboratories, two CDC employees, two participants from Denmark and one from Hong Kong learned a variety of more advanced BioNumerics data handling capabilities, as well as clustering and gel analysis theory.

On Tuesday afternoon, before the PulseNet Update Meeting, CDC and Applied Maths personnel were available to answer questions on BioNumerics, PulseNet client customization scripts, image analysis, and pattern comparison issues in an open session for Update Meeting participants. Computers with BioNumerics and all PulseNet client customization scripts were available for participants to use and to receive one-on-one training and problem solving. Evaluations from participants from both workshops and comments from those that participated in the open sessions indicated that the workshops and other training sessions were successful.

PulseNet Meeting Evaluation Form Summary

Kimberly Hutcheson, Microbiologist, PulseNet Methods Development and Validation Laboratory, Centers for Disease Control and Prevention, Atlanta, GA

Reading through the PulseNet Meeting Evaluation forms indicates that the 2003 PulseNet Update Meeting was a huge success. A big thank you goes out to all of you who filled out their evaluation form and supplied us with your valued comments and suggestions. We want to assure you that your comments are heard and that your suggestions will be taken into consideration when we plan the 2004 PulseNet Update Meeting.

Everyone who responded felt that the "Back to Basics" theme was very appropriate and that the overall pace of the meeting was just right. Breakout sessions were one of the biggest hits of the meeting. Participants made many positive comments about these breakouts, as well as suggestions about how to improve them for next year. Many people commented that they liked the breakout sessions because these sessions gave them a chance to get to know the members in their area better and to finally put a face with a name behind the emails.

People felt that the quality of both the presentations and the subject matter was very high this year. The presentations on laboratory issues, BioNumerics, equipment maintenance, and new subtyping methods were some of the favorites. Many also thought that the idea of the poster session was a nice addition to the meeting. One participant commented that the range of information on these posters gave a good overview of different aspects of enteric pathogens.

Those people who attended BioNumerics training courses before the meeting and the open session on Tuesday afternoon and Wednesday evening had very positive things to say about their experiences. They stated that the BioNumerics staff and the database team provided them with valuable solutions to their problems. A large number of this year's participants indicated that they would be interested in participating in similar training, if it is available in conjunction with the meeting next year.

Last, but certainly not least, people overwhelmingly stated that they had a wonderful time in the great state of Texas. A large portion of this year's participants thought that the hotel was excellent and they especially liked its location. Everyone particularly enjoyed the welcome reception and the social event. One person stated: "Fajitas and boats! It doesn't get any better than that (although the margaritas added nicely)!"

I guess now is the time that we all have to say goodbye to the Lone Star State and hello to sunny San Diego!

(Continued from page 2) what the state public health labs expect from the CDC team with regard to database information and WebBoard follow-ups. The breakout session then ensued, with productive communication about software conversion, data sharing, and WebBoard utilization. After the break, CDC's Jean Whichard gave a talk on melding PulseNet, NARMS, and FoodNet to study multi-drug-resistant *E. coli* O157:H7. Next, Kristy Kubota described her work on PFGE subtyping of *Yersinia pestis* and *Francisella tularensis*, citing a plague investigation from 2002. Thursday ended with a reception buffet of superb fajitas and shrimp at the Rio Rio Cantina followed by a barge ride in the turbulent *whitewater* along the Riverwalk.

Friday morning, Susanna Schmink and Pam Cassiday, both from CDC, discussed their work developing the *Neisseria meningitidis* and *Bordetella pertussis* PFGE databases, and Marc-Alain Widdowson, a CDC epidemiologist, enlightened us with a presentation on the epidemiology of Noroviruses, recounting the progression of 2002 outbreaks on cruise ships. Next, Leslie Wolf, Sandra Smole, and Kristin Pederson presented work on next-generation methods for molecular subtyping. All three are striving to find methods that exceed PFGE's discriminatory power, portability, and ease of inter-laboratory data comparison. Two of the methods considered include (1) comparing the DNA sequences of several conserved and variable genetic loci and (2) multi-locus variable-number tandem repeat analysis (MLVA) involving PCR-amplifying multiple tandem repeat regions using specific primers and comparing generated band patterns.

PulseNet's international representatives, Lai King Ng, Peter Gerner-Smidt, and Cindy Luey described progress on constructing PulseNet Canada, Europe, and Asia Pacific. Then Amanda Gatto updated us on the Salm-Gene project, comparing phage typing and PFGE in two *Salmonella* serotypes.

Bala Swaminathan closed the meeting with slides of beautiful beaches and killer whales—announcing that the 2004 PulseNet Update Meeting will be held in San Diego, California. *Can we have it there every year?* CDC

STATE, COUNTY AND CITY HEALTH DEPARTMENTS

FROM AROUND THE NATION, WE WELCOME:

- **Alicia Ebeling** and **Felicia Gomez**, senior laboratory technicians in the PFGE lab, and **Geetha Nattanmai**, a research scientist in the biodefense laboratory of the New York State Department of Health.
- **Amy Hackman-Dreibelbis,** who recently joined the Molecular Microbiology Section at the Pennsylvania Department of Health as a Microbiologist 2.
- **Selina Jaman,** who joined the Minnesota Department of Health, PFGE lab. She is a Bacteriologist I and works exclusively in molecular epidemiology.
- **Sheri Roberts,** Microbiologist, to the Molecular Biology lab of the Tennessee Department of Health Laboratory Services.
- **Dana Tamashiro,** who joined the Bio-terrorism Response Laboratory of the Hawaii Department of Health as a Microbiologist.

FAREWELLS:

- ***Amy Davignon*** and **Anne Clobridge,** technicians who worked sequentially from 1999-2001 in the New York State Department of Health, have been promoted to different positions.
- **Myron Honda** will no longer be responsible for the PulseNet activities at the Hawaii Department of Health, although he will continue in his position in the Environmental Microbiology Laboratory.
- **Debbie Mahaney** left the Missouri Department of Health in April to take a position with the San Diego Biowatch Program.
- **Carol Worthington** left the Tennessee Department of Health Laboratory Services in February 2002 from the PFGE laboratory to work in the Department of Agriculture.
- **Alison Stout** left the Massachusetts State Health Laboratory and is now living in California.

PulseNet Laboratory Profile

West Virginia

Christi Clark, Microbiologist II, West Virginia Department of Health and Human Services, South Charleston, WV

Christi Clark, West Virginia Department of Health and Human Resources PFGE Lab

Established around 1917, the West Virginia Office of Laboratory Services (OLS) occupies a small facility on the banks of the Kanawha River in South Charleston, WV. We have continually attempted to expand our services and keep up with the latest scientific advancements. We currently have 40 full-time technologists at OLS doing everything from HIV and Tuberculosis to environmental water and milk testing. The Microbiology Department received our Pulsed-Field Gel Electrophoresis equipment in 1998. We began performing routine analysis on all *Salmonella, E. coli* 0157:H7 and *Shigella* isolates in 1999.

Our one full-time PFGE technologist, Christi Clark, was trained at CDC in June of 2000 and is in the process of preparing for certification. She has been employed at the OLS since December of 1998. She received her B.S. in Biology from West Virginia State College. In addition to her PFGE work, she is also the system administrator for Laboratory Information Tracking System (LITS) Plus, the Laboratory Information Management System (LIMS) used by OLS. She also works with enteric specimens and performs back-up duties for both the Parasitology and the General Cultures/Bacteriology departments. Although most people will find it hard to believe, the OLS has a very low specimen load. We received 166 *Salmonella*, 13 *E. coli* 0157:H7 and 9 *Shigella* specimens in 2002. Our goal is to use PFGE to analyze all of these specimens; as of February 2003 we have completed analysis of 96% of these isolates.

On occasion, the PFGE laboratory is asked to do some special projects. Currently, we are investigating a *Staphylococcus aureus* outbreak within our state prison system. We have been performing PFGE analysis on several isolates received as part of the outbreak. No source of contamination has yet been determined, but our epidemiologists are working hard. We also investigated an *Enterococcus* outbreak at a local hospital. Word has slowly gotten out about the significant value that PFGE analysis brings to an investigation. Several of our foodborne epidemiologists have come to the lab for training. We have shown them the procedure as well as how we analyze the gels, so that they are able to understand the time and training it takes to get PFGE results.

We have found the WebBoard to be a great addition to the PulseNet family. Although we seldom have matches to the posted patterns, we still try to monitor the WebBoard as much as possible. In the past, we have had matches to a Canadian outbreak of *Salmonella* ser. Enteritidis linked to raw almond consumption and to an *E. coli* 0157:H7 outbreak in Illinois linked to ground beef.

Since our laboratory is so small, we do not get to participate in many research projects. Staff and space restrictions have hindered our ability to do so. In many ways, West Virginia is behind in new methods, especially new molecular methods. In fact, we are in the process of purchasing our first PCR equipment.

The Office of Laboratory Services has strived to bring the best to the citizens of West Virginia for the past 80 years. We hope to continue serving our residents for many more years to come.

PulseNet News
A Publication of:
The Centers for Disease Control and Prevention, National Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases, Foodborne and Diarrheal Diseases Branch.

To receive regular copies of the PulseNet News, send your request to:

PulseNet News
c/o Kelley Hise, MPH (khise@cdc.gov)
1600 Clifton Road, NE
Mailstop CO3 Atlanta, GA 30333
Tel: 404-639-4558 • Fax: 404-639-3333

DEPARTMENT OF HEALTH & HUMAN SERVICES
Official Business Penalty for Private Use $300

FIRST-CLASS MAIL
POSTAGE & FEES
PAID
PHS/CDC
Permit No.
G-284

Centers for Disease Control
and Prevention (CDC)
Atlanta, Georgia 30333
Return Service Requested

INSIDE PulseNet — Visit http://www.cdc.gov/pulsenet for the latest...

Publications and Abstracts

- Fey PD, Said-Salim B, Rupp ME, Hinrichs SH, Boxrud DJ, Davis CC, Kreiswirth BN, Schlievert PM. Comparative molecular analysis of community- or hospital-acquired methicillin-resistant *Staphylococcus aureus*. Antimicrob Agents Chemother 2003;47:196-203.
- Fitzgerald C, Sails A, Hunter S, Ribot E, Fields P, PulseNet participating laboratories. PFGE subtyping of *Campylobacter jejuni*—What's the point?: Experiences from the PulseNet *C. jejuni* database. Campylobacter, *Helicobacter*, and Related Organisms (CHRO) 2003 workshop, to be presented in Aarhus, Denmark, September 6-10, 2003.
- Hutcheson K. PulseNet standardized protocols for *Vibrio cholerae*, *V. parahaemolyticus*, and *Yersinia enterocolitica*: an update. Presented at the 2003 Annual PulseNet Update Meeting, held in San Antonio, TX, April 29 May 2, 2003.
- Kincaid J, Hunter S, Kubota K, Hise K, Lambert-Fair M, Huddle M, Jones J, Gerner-Smidt P. Molecular Surveillance of Shiga Toxigenic *Escherichia coli* O157:H7 by PulseNet USA in 2002. 90th Annual Meeting of the International Association for Food Protection (IAFP), to be presented in New Orleans, Louisiana, August 10-13, 2003.
- Naimi TS, Wicklund JH, Olsen SJ, Krause G, Wells JG, Bartkus JM, Boxrud DJ, Sullivan M, Kassenborg H, Besser JM, Mintz ED, Osterholm MT, Hedberg CW. Concurrent outbreaks of *Shigella sonnei* and Enterotoxigenic *Escherichia coli* infections associated with parsley: implications for surveillance and control of foodborne illness. J Food Prot 2003 Apr;66:535-541.
- Okwumabua O, O'Connor M, Shull E, Strehlow K, Hull C, Quinn J, Hamacher M, Valley A, Yu A, Adams M, Kurzynski T. Characterization of *Listeria monocytogenes* isolates from animal clinical cases. 103rd Annual meeting of the American Society for Microbiology (ASM), presented in Washington D.C., May 18-22, 2003.
- Pederson KJ, Boxrud D, Vetter SM, Besser J, Bartkus JM. Molecular subtyping of *Salmonella* Typhimurium by multi-locus VNTR analysis. 103rd Annual meeting of the American Society for Microbiology (ASM), presented in Washington D.C., May 18-22, 2003.
- Stefanova R, Darnell S, Lee J, Cave D, Smith G from Arkansas Department of Health, Little Rock, AR, and University of Arkansas for Medical Sciences, Little Rock, AR. Genetic diversity of *Salmonella enterica* serotype *Javiana*: enhancing epidemiological surveillance. 103rd Annual meeting of the American Society for Microbiology (ASM), presented in Washington D.C., May 18-22, 2003.
- Warshauer DM, Kurzynski T, Archer J, Harrington P, Croft D, Koschmann C. Investigation of an outbreak of *Campylobacter jejuni* infections associated with consumption of unpasteurized milk. 103rd Annual meeting of the American Society for Microbiology (ASM), presented in Washington D.C., May 18-22, 2003.

CDC PulseNet Task Force Farewells

- **Adam Beall**, a member of the PulseNet Database Administration team since September 2002, was responsible for the *Shigella* database. He will be leaving CDC at the end of July to attend medical school.

Call For Contributions.

The editor welcomes any contributions for the "PulseNet News" Newsletter in the form of short articles, news of recent publications, conference abstracts, news and anything else related to PulseNet. Please direct all submissions to the APHL PulseNet Program Manager, Sharon Rolando (SRolando@aphl.org).