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The National Molecular Subtyping Network
for Foodborne Disease Surveillance



PulseNet News

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



VOLUME 3 • ISSUE 3 • SUMMER 2004

8th Annual PulseNet Update Meeting, April 2004, San Diego, CA

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The 8th Annual PulseNet Update Meeting was held from April 27 to April 30 at the Holiday Inn on the Bay in San Diego, California. This year's meeting was hosted by the California Department of Health Services, the Los Angeles County Public Health Laboratory, and the San Diego County Public Health Laboratory.

More than 170 participants gathered to support the theme of "Getting Connected." This year's meeting focused on ways to strengthen communication between laboratorians and epidemiologists. The theme also emphasized getting connected to local and national databases, the Federal PulseNet Laboratories, PulseNet International and other molecular typing networks, and finally, getting connected to next-generation subtyping methods.

The meeting opened with a welcome speech by Dr. Paul Kimsey, Director of the

California State Public Health Laboratory. Keynote presentations by Dr. Craig Hedberg of the University of Minnesota School of Public Health and Dr. Norman Crouch, Director of the Public Health Laboratory Division at the Minnesota Department of Health, touched upon what makes PulseNet work and how PulseNet has impacted foodborne disease outbreak recognition and investigation in the United States. Both

ceptibility testing on the isolates helped to define the outbreak and reduce the epidemiological investigation time. Susan Van Duyne and Jana Lockett, both from CDC, presented "Salmonella Newport MDR strains: Same or Different Clones?" further justifying the use of *BlnI* patterns and antimicrobial resistance profiles to validate the slight differences observed in *XbaI* patterns.

Dave Boxrud of the Minnesota Department of Health presented on a multi-state outbreak of *E. coli* O157:H7 involving vacuum-packed frozen steaks. Dave's presentation reinforced the importance of real-time subtyping and timely WebBoard postings and responses; this outbreak may not have been identified so quickly without the PulseNet communication network.

Desmond Jennings of CDC gave an update on the status of the *Shigella* database and was excited to announce that it is now online. The *Shigella* database has a limited number of *S. flexneri* patterns; the patterns make up only 3% of the entire database. Desmond asked that the PulseNet participants be "Effective Detectives" and provide as much information as possible concerning serotyping and demographics when submitting to the database.

Ana Maria Valle-Rivera, Texas Department of Health, and Paola Bordonni,

(Continued on page 2)



speakers emphasized that that timely integration of surveillance, subtyping, and epidemiologic evaluation is essential to maximize the effectiveness of PulseNet. A wonderful reception sponsored by Bio-Rad welcomed participants and set the mood for our "Getting Connected" theme.

The Wednesday morning session, opened by Sharon Rolando of APHL, included an update on the 2002 PulseNet Annual Report, which has been posted to the PulseNet WebBoard. Next, Mike McDermott of the Oklahoma Public Health Laboratory presented on a "Possible Multidrug-Resistant Outbreak of *Salmonella* Newport," pointing out that subtyping isolates with a second enzyme and performing antimicrobial sus-

APHL and PulseNet participants would like to thank the 2004 PulseNet Update Meeting sponsors Bio-Rad and Applied Maths.

Update Meeting 2004 (Continued from page 1)

CDC, presented on a recent listeriosis outbreak involving Mexican queso fresco, an unpasteurized soft cheese. Both presentations stressed the importance of posting patterns to the WebBoard promptly to allow for real-time queries, and showed a difference made by rapid detection of a cryptic outbreak. The Texas epidemiological investigation resulted in the alerting of local hospitals to the possibility of more listeriosis cases and the recommendation to the government to strictly enforce the ban on Mexican queso fresco.

CDC's Collette Fitzgerald presented, "PFGE Subtyping of *Campylobacter jejuni* – What's the Point? Experience from the PulseNet *C. jejuni* Database," which used two recent outbreaks of *Campylobacter* to illustrate the importance of a standardized PulseNet PFGE protocol and the use of real-time subtyping to greatly facilitate the epidemiologic investigations of *C. jejuni* outbreaks. Collette also announced that a certification set of seven isolates is ready to be sent out to requesting laboratories, and that the *Campylobacter* database is scheduled to be online in summer 2004.

After lunch, Michael Lynch of CDC presented on the jargon of the epidemiology world, a great lecture for lab folk! Roshan Reporter, Los Angeles County Department of Health Services, stressed the need for appropriate education and hygiene for food handlers who could potentially be the sources of widespread outbreaks if they continue to work while they are ill. Chris Braden from CDC spoke next about molecular epidemiology and the role of

PulseNet in outbreak investigations, concluding that PFGE results provide standard guidance on when to conduct additional genotype analyses and how to proceed with investigations. Matt Richardson, Texas Department of Health, gave an entertaining presentation on how connecting the laboratorians and the epidemiologists can result in efficient and timely discovery of clusters and outbreaks. While describing the investigation of a typhoid fever outbreak in Texas linked to the consumption of raw oysters, Matt stressed that the cooperation between the epidemiologists and the laboratorians resulted in the timely detection and closing of the suspected oyster site. The afternoon

Many of the new features are geared directly toward use in PulseNet's gel analysis; 3-D models of banding, contingency tables, and minimum spanning trees are just a few of the tools highlighted in the presentation.

ended with a poster session sponsored by Applied Maths. There were 13 posters presented during the session.

Thursday morning started with an update by Emilio Esteban on how USDA-FSIS laboratories are getting connected. Next, Thomas Donkar talked about ongoing activities at FDA, and how CVM, CFSAN, and ORA benefit from their participation in the

PulseNet program. The FDA has a growing database of foodborne pathogens, and has connected its various labs through the use of permanent bundle files. Kristy Kubota, CDC, presented on extending the network to include *Yersinia pestis* and *Francisella tularensis*. The dangerous pathogens surveillance network is working to develop databases for the typing and tracking of plague and tularemia.

The next speaker, Chien-Shun Chiou from Taiwan, shared his experience with improving PFGE and the current status of molecular subtyping in Taiwan. Paul Mola from Roche gave the inside scoop on restriction enzyme chemistry. The late morning breakout session focused on sharing laboratory concerns and ideas for improvement.

Kelley Hise from CDC introduced the theme for the afternoon—Getting Connected: optimizing the national database. Susan Hunter gave an update on improvements made to PulseNet software, including the new master scripts and bundle tools that will make analysis and submitting of patterns easier. Robert Long of CDC did an excellent job explaining the collaboration between PulseNet and the Laboratory Response Network (LRN). Paul Vauterin, Applied Maths, described new features of BioNumerics version 3.5 and gave a sneak preview of some features in version 4.0. Many of the new features are geared directly toward use in PulseNet's gel analysis; 3-D models of banding, contingency tables, and minimum spanning trees are just a few of the tools highlighted in the presentation. Susan Van Duyne and Christine Steward addressed the issues surrounding gel quality and band marking. The mismarking of bands is impacting the surveillance of data and causing a negative effect on the course of epidemiological investigations. Laboratories should strive to improve the quality of gels; better gels provide improved band resolution that eases the marking of the bands, and correct marking of the bands improves the surveillance of data. Ravi Pallipamu, Washington State Department of Health, gave a helpful talk on streamlining PFGE through the implementation of time-saving practices such as pre-aliquoting reagents.

The third breakout session, which was given a rousing introduction by Laura Kornstein of New York City Department of Health, covered a range of topics, including analysis and interpretation of results, software issues, database management, and applications of PFGE data in outbreak investigations.

(Continued on page 3)

2005 PULSENET UPDATE MEETING TO BE HELD IN SEATTLE, WA



The 9th Annual PulseNet Update Meeting, hosted by the Washington State Department of Health, will be held May 9th through 11th, 2005, at the Westin in Seattle, Washington. APHL and CDC thank the Washington State Department of Health for its assistance in choosing the venue for our next meeting. We look forward to seeing all of the PulseNet participants at the meeting in Seattle. Participants may wish to consider attending the 7th International Meeting on Microbial Molecular Markers (IMMEM) to be held in Victoria, British Columbia, Canada immediately following the Update Meeting.



Update Meeting 2004 (Continued from page 2)

Connecting internationally, PulseNet Latin America and PulseNet Asia-Pacific presented on their recent and upcoming PulseNet activities.

The game show, "PulseNut Feud," was lead by Dr. Marcus Head from USDA-FSIS as the returning host, and a newcomer this year, Paola Bordonni from CDC. Thanks to the willing and well-informed "family members" from both teams, the game was entertaining for all. The evening was wrapped up aboard the Lord Hornblower for a wonderful, narrated cruise on the San Diego Bay. The perfect weather, delicious appetizers, and great company made this a highlight of the meeting.

Friday's session started with highlights from the breakout sessions given by Dave Boxrud, Chris Carlson, and Laura Kornstein. Feedback from the "Communication between Lab and Epi" breakout session underlined concerns from laboratories that they need more feedback from epidemiology, better synchro-

nization between WebBoard and EpiX postings, and area meetings with an epi/lab component. Some points discussed in the "Laboratory Issues" session included: gel quality, reagents, troubleshooting, and types of media used. Finally, the "Software Communications" session discussed the expansion of the quarterly reports to connect PFGE patterns with the outcome of the outbreak and to relate this to the frequency of a pattern.

Peter Gerner-Smidt and Lai-King Ng gave updates on PulseNet Europe and PulseNet Canada, respectively. PulseNet Europe is hoping to have a fully functional database system and infrastructure in place by 2005, an active QA system by 2006, and all participants trained by 2007. Christine Steward outlined a new standard for certification and proficiency testing, specifically that TIFF grading will be more stringent, the in-house gel certification process is in review, and the Web-based certification and proficiency testing (PT) tracking system is under development. Ravi Pallipamu updated the status of ORSA on PulseNet and noted that a standardized ORSA protocol and certification set is available to all labs that would like to subtype this organism. Steve Monroe discussed the status of CaliciNet/IDMEDS, a norovirus sequence database containing approximately 2,400 sequence records. Alison Drake gave an update on connecting PulseNet, NARMS, and FoodNet data.

Alyssa Bumbaugh, Christine Pederson, Sandra Smole, and Leslie Wolf discussed their projects related to next-generation subtyping methods for *Campylobacter*, *Salmonella*, *E. coli* O157:H7, and *Listeria monocytogenes*, respectively. Much work has been accomplished in this area, and many are hopeful that technology transfer to other PulseNet labs might take place later this summer. Finally, Bala Swaminathan gave a wrap-up of the meeting and

announced the dates and location for the 9th Annual PulseNet Update Meeting: May 9 to May 11, 2005, at the Westin hotel in Seattle, WA. Mark your calendars!!

Thank you to the San Diego hosts, CDC, and APHL! 

Kudos to the 2004 PulseStar Award Winners and Special Recognition Awardees

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

On behalf of all PulseNet participants, APHL and the CDC PulseNet Task Force would like to congratulate the three winners of the 2004 PulseStar Awards: Ravi Pallipamu from the Washington State Department of Health, Chris Carlson from the South Dakota Department of Health, and Donna Wrigley from the State of Maine Health and Environmental Testing Laboratory. All of this year's 19 nominees were strong candidates who should be proud of the work they have done and continue to do for PulseNet.

The PulseStar Award is presented annually by APHL and the PulseNet Task Force at CDC to one or more PulseNet participants whose efforts have contributed significantly to the advancement of PulseNet activities in public health during the previous year. Each winner was presented with a plaque and a check for \$500 from APHL at the 2004 PulseNet Update Meeting in San Diego, California.

Ravi Pallipamu has been active in PulseNet activities for many years, during which he has continually and proactively offered his assistance and expertise to all staff members from the laboratories in the Washington area. Ravi is a frequent speaker at the PulseNet Update Meeting, where he shares his experiences in Washington State with the rest of the network. Over the past year, Ravi's work in the Washington State Public Health Laboratories has been invaluable for several epidemiologic investigations. During the investigation of two outbreaks (one involving *Salmonella* Enteritidis and the other involving *Bordetella pertussis*), Ravi screened isolates using dozens of additional restriction enzymes in order to help distinguish outbreak strains. Ravi has named 3000 isolates in several different genera to establish a library of PFGE patterns for comparisons, and has developed daily, yearly, and historical reports for the Washington State epidemiology office. Ravi's enthusiasm and commitment strengthen the PFGE section and the ability of the Washington Department of Health to offer services to its partners.

Chris Carlson also has been an important part of PulseNet for many years. Chris consistently produces high quality PFGE

APHL PRESIDENT'S LETTER DISCUSSES PULSENET'S ROLE IN PUBLIC HEALTH

The current President of APHL's board of directors is Dr. Norman Crouch from the Minnesota Public Health Laboratory. In the President's letter section of the current issue of the APHL, *Minute* Dr. Crouch highlights the vital role PulseNet plays in public health, and specifically in foodborne disease surveillance. This letter and the entire issue of the *Minute* can be found at www.aphl.org/docs/newsletter/March-April%202004.pdf.

COMING SOON:

PULSENET MASTER SCRIPTS v2 AND CAMPYLOBACTER DATABASE SCRIPTS

A Web/conference call is anticipated at the time of the distribution of Master Scripts v2 to introduce the new *Campylobacter* client scripts and improvements for other databases. Please continue to let us know what changes and additions you would like to see by emailing us at PFGE@cdc.gov.

gels, which he posts to the PulseNet WebBoard when appropriate. He provides rapid PFGE analysis of enteric isolates and relays PFGE results to epidemiologists in a timely manner. He manages to do this despite having many other responsibilities at the South Dakota Public Health Laboratory, such as performing West Nile virus testing, managing the ELC grant for his state, and giving public presentations on behalf of his laboratory. Chris also has volunteered for other PulseNet responsibilities, such as the 2004 Update Meeting agenda committee. Chris is a dedicated scientist and is very deserving of the PulseStar Award.

Donna Wrigley has been instrumental in enhancing Maine's surveillance for food-borne/enteric illnesses through timely PFGE testing and PulseNet reporting. For over five years, Donna has been an advocate for PFGE testing and reporting to PulseNet for identifying outbreaks in Maine as well as in the nation. In 2003, due to her commitment to PulseNet, 100% of *Salmonella* isolates serotyped by the Maine State Laboratory were subtyped by at least one enzyme and submitted to the PulseNet National Database. As a result, she recently identified a large outbreak of *Salmonella* Typhimurium in Maine. This initiated an investigation of a multi-state outbreak of *Salmonella* DT104. During the investigation of this outbreak, Donna used PulseNet as an important tool with which to identify cases in Maine as well as cases throughout the country. She expedited PFGE testing and PulseNet reporting for Maine, communicated regularly with other states that reported matching patterns on PulseNet, and regularly reported PulseNet results to the principal investigators of the outbreak. In addition to this outbreak, Donna also identified Maine's connections with other state outbreaks, including national outbreaks of *Salmonella* Newport and *Salmonella* Muenchen. Donna has proven her dedication and commitment to PulseNet, as she recognizes the importance of PulseNet's role in surveillance and ultimately preventing further transmission of disease.

In addition to the three PulseStar awards, CDC presented two Special Recognition awards. Dr. Kai-Man Kam of the Public Health Laboratory Centre in Hong Kong received an award for his continued efforts toward building and improving the PulseNet Asia-Pacific Network. This network includes 13 countries/areas and recently held its first PFGE and BioNumerics workshop in Hong Kong. Dr. Kam is the Chair of the PulseNet Asia-Pacific Steering Committee. The second Special

Recognition award was presented to the Molecular Typing Team at the Virginia Division of Consolidated Laboratory Services (DCLS). The first-ever PulseNet Workshop for food industry participants was held in Richmond, VA, in the fall of 2003. The laboratory staff at DCLS went to extreme measures to host an incredibly organized and well-run workshop, despite hazardous weather conditions, including a hurricane and tornados. Members of the Molecular Typing Team who were recognized for their efforts were Denise Toney, Elise Smith, Francis Tannor, Kelly Felkey,



Ravi Pallipamu



Donna Wrigley



Chris Carlson

David Elliott, and Kim Ferguson. PulseNet would like to thank the entire staff at DCLS for hosting this workshop.

APHL and CDC appreciate the ongoing efforts of all members of the PulseNet Network. Your timely and conscientious work continues to help in the investigation and prevention of food-borne illness. **CDC**

2004 PULSENET

Update Meeting Evaluation Form Summary

Melissa Butler, Microbiologist, PulseNet Methods Development and Validation Laboratory, Centers for Disease Control and Prevention, Atlanta, GA

A majority of this year's attendees were impressed by the quality of content and level of organization of the event! The final number of registrants for the meeting reached 173. Thirty-seven percent of meeting attendees completed and submitted an evaluation form. Their comments and suggestions are greatly appreciated and will be taken into consideration for planning the 2005 PulseNet Update Meeting.

Highlights from the survey:

- The theme this year, "Getting Connected," was well received by all the participants of the survey. In fact, the theme was unanimously considered appropriate for the meeting by all persons who filled out a survey. One person elaborated, saying connectivity issues are important and hoped that everyone attending the meeting will return to their respective labs sharing this sentiment.
- Breakout sessions were helpful to the majority of people who responded to the survey. Many thoughtful suggestions were offered toward improving the effectiveness of these sessions next year. Several people said they enjoyed the mixing of area labs so that people who might not otherwise interact could get acquainted and make contacts for future support. In effect, the breakout sessions helped to facilitate one goal of the meeting this year: "Getting Connected."
- When queried as to which topics were of most interest to attendees, the top five responses were:

BioNumerics/database updates including band marking, cluster definitions, etc. (19); next-generation subtyping methods (11); outbreak investigations (11); lab troubleshooting (9); and lab-epi interactions (8).

- The quality of presentations was appreciated by all. Many noted outstanding presentations such as Matt Richardson's "When Mollusks Attack! Typhoid Fever in Texas," Michael Lynch's "The Chamber of Epi Secrets," and Ravi Pallipamu's "Streamlining PFGE Work in WA State."
- The training sessions for both BioNumerics and Laboratory Troubleshooting were helpful to many participants. Regarding the BioNumerics training sessions, one person emphasized "how useful hands-on help is when it comes to software." And in reference to the Laboratory Troubleshooting session, one person observed that the format of the session was great for discussing ways to improve gel quality.
- Sunny San Diego proved to be a delightful location for the meeting! Everyone loved the cruise on San Diego Bay. People did not want the meeting to end! The relaxed atmosphere aboard the ship allowed people to make new acquaintances and catch up with people from last year's meeting.

Thank you to all who contributed to the meeting, whether by planning and organizing, presenting, or attending. Your hard work and contributions helped make this year's meeting enjoyable to all! Approximately 80% of the people who submitted a survey expect to attend the 2005 PulseNet Update Meeting. We look forward to seeing all of you again next year!

BioNumerics Software Workshops for PulseNet Participants Held in San Diego

Jennifer Kincaid, *E. coli* Database Manager; Jana Lockett, *Salmonella* Database Manager, Centers for Disease Control and Prevention, Atlanta, GA and Kristy Kubota, MPH, Research Microbiologist, Centers for Disease Control and Prevention, Fort Collins, CO

Two BioNumerics workshops, for beginning and intermediate levels, were conducted prior to the 8th Annual PulseNet Meeting in San Diego, CA. The one-and-a-half-day sessions were held on the Monday and Tuesday preceding the meeting along with an open BioNumerics session on Tuesday afternoon. Brenda Brown, who is responsible for computer network support for PulseNet, set up server databases for both workshops so the participants could complete their training exercises as if they were in their own laboratories. Most of the exercises consisted of working on past outbreak scenarios so that participants were able to practice uploading entries to a PulseNet server, and create PulseNet bundle files and WebBoard postings.

Beginning BioNumerics Workshop

The participants learned the BioNumerics installation process, the steps necessary to analyze a TIFF image, to link data to the gel lanes, and to submit the pattern and corresponding data to the PulseNet online databases. Participants then learned to perform comparisons and searches in their local database and the national database.

Intermediate BioNumerics Workshop

Twenty participants from PulseNet participating U.S. public health laboratories and food regulatory agencies learned methods for managing their local databases, importing Microsoft Excel worksheets into BioNumerics, and a variety of more advanced BioNumerics data handling capabilities. In addition, composite datasets consisting of more than one experiment type and advanced clustering techniques were presented.

BioNumerics Open Session

An open session was held on Tuesday afternoon (before the PulseNet Update Meeting), CDC and Applied Maths personnel were available to answer questions on BioNumerics, PulseNet client customization scripts, and image analysis issues for all Update Meeting participants. Computers with BioNumerics and PulseNet client customization scripts were available for participants to use and receive one-on-one assistance. Evaluations from both workshops and comments from those who participated in the open sessions indicated that the workshops were extremely successful. **CDC**

IOWA

Alison Houston, MT (ASCP), Public Health Microbiologist, University of Iowa Hygienic Laboratory, Iowa City, Iowa

The University of Iowa Hygienic Laboratory (UHL) is celebrating its centennial anniversary this year. The laboratory, created by the Iowa General Assembly in April 1904, is a permanent part of the University of Iowa. It is one of two state public health laboratories (Wisconsin is the other) that are part of a state university.

The initial purpose of the UHL was to identify and study diphtheria, rabies, tuberculosis (TB), and typhoid fever diseases prevalent in Iowa and the nation at the beginning of the 20th century. Today, some 200 individuals work from three labs located in Iowa City and Des Moines. The UHL is still carrying out testing for some of the original diseases as well as a host of emerging diseases, such as SARS and West Nile virus. Other activities the UHL is involved with include bioterrorism testing, newborn metabolic screening, environmental testing, and foodborne disease surveillance.

The UHL has been conducting foodborne disease surveillance as a part of PulseNet since 1998. The PFGE section was established in the Microbiology Department at the Iowa City Laboratory by Larry Holcomb. Larry and several EID fellows kept the PFGE section running until January 2001, when a full-time PFGE technologist could be hired. This section is a nice complement to the rapidly growing molecular biology section, which instituted PCR testing in 1994. The UHL presently has PCR and sequence-based assays for *B. pertussis*, norovirus, West Nile virus, Lyme disease, *Ehrlichia*, *L. pneumophila*, enteroviruses, *Rickettsia*, RSV, and HIV-1 proviral DNA.

The UHL PFGE section has one full-time technologist and three other technologists who backup the section and help with surge capacity as needed.

The full-time technologist, Alison Houston, was hired by the UHL in August of 2000, and began working with PulseNet in January of 2001. In addition to doing PFGE, Alison rotates through the rabies section regularly, teaches medical technology students about PFGE, and is the backup in the TB/Mycology lab. When Alison is pulled away because of other laboratory needs or has an especially large specimen volume, Larry Holcomb and Mary DeMartino help out with the laboratory testing portion of the PFGE section. Kris Hardin, a health laboratory scientist with an epidemiology background, helps with the PFGE data analysis and reporting results.

Alison completed the PulseNet PFGE training at CDC in June of 2002 and is certified by CDC for *E. coli* and *Shigella*. Her certifications for *Listeria* and *Salmonella* have been submitted. Iowa has been fingerprinting every isolate of *Salmonella*, *Shigella*, *Listeria*, and *E. coli* O157:H7 since 2002, with an average 600 to 700 of these foodborne disease isolates each year. The majority of the isolates are *Salmonella* (approximately 400/year), followed by *E. coli* O157:H7 (approximately 100/year), and *Shigella* (approximately 70/year). *Listeria*, at present, is not a prominent foodborne pathogen in Iowa, where only one to three clinical isolates are received per year.

In addition to the foodborne pathogens routinely fingerprinted as a part of PulseNet, the PFGE section has performed molecular strain typing on *Campylobacter jejuni*, *Yersinia enterocolitica*, *Clostridium perfringens*, and *Neisseria meningitidis* for cluster investigations initiated by our own state health department or

from WebBoard postings. When requested, the section also assists hospitals in the state of Iowa with DNA fingerprinting nosocomial pathogens such as: *Staphylococcus aureus* and methicillin-resistant *Staphylococcus aureus* (MRSA); *Enterococcus* spp; and vancomycin-resistant *Enterococcus* (VRE), *Streptococcus pneumoniae*, *Enterobacter* spp., and *Serratia marcescens*.

In 2001, the lab participated in a joint project with a group at the National Veterinary Diagnostic Lab in Ames, Iowa, where DNA fingerprinting was used to track *Salmonella* PFGE patterns from individual cows and farm environments and then compare the results to abattoir patterns to discern where contamination occurs and how it is spread. Most recently, the lab assisted the environmental section with the use of the Riboprinter® for bacterial source tracking in surface water. Currently, the UHL is aiding a regional hospital with the comparison of environmental strains of *Legionella pneumophila* to clinical strains.

The PFGE section is constantly striving to improve. It has increased the number and type of organisms that are fingerprinted as well as decreased turnaround times. The section looks forward to incorporating the new and upcoming fingerprinting techniques, as well as adding additional organisms to PulseNet as those databases become available. The UHL hopes to continue providing its valuable services to the state of Iowa and to PulseNet, and is looking forward to future challenges.



L-R Kris Hardin, Mary DeMartino, Alison Houston, and Larry Holcomb

CDC

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.

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Publications and Abstracts

- Kincaid J, Head M, Hise K, Hunter S, Jones J, Kubota K, Swaminathan B. **Commonality of PFGE Patterns among Clinical and Food Isolates within the PulseNet *E. coli* O157:H7 National Database.** American Society for Microbiology (ASM) presented in New Orleans, Louisiana, May 2004.
- Hise K, Lin C, Zhang L, Bordonio P, Mauro L, Norton D, Sobel J, Toguchi A, Barth S, Avashia S, Richardson M, Gaul L, Abell A, McAndrew S, Rowe D, Sorenson W, Linn M, Long S, Graves L, Swaminathan B. **Laboratory Investigation of a *Listeria monocytogenes* Outbreak Associated with Consumption of Soft Cheese.** 91st Annual Meeting of the International Association for Food Protection (IAFP), presented in Phoenix, Arizona, August 8-11, 2004.

Welcomes/Farewells

From around the nation
we welcome:

- **Molly Joyner** joined the CDC PulseNet Database Administration team in April 2004 and will be working primarily with

E. coli analysis and cluster identification. Molly comes to us from Emory University where she received her B.S. in Biology in May 2003.

- **Merritt Adams** joined the CDC PulseNet database Administration team in July 2004. She will be working primarily with *Campylobacter* analysis and cluster identification, but will also assist with all the other bacteria as well. Merritt is a 2002 graduate of Northwestern University, where she received her BA in Environmental Sciences.
- The former Texas Department of Health Microbiological Investigations Section that housed the PulseNet activities has fused with the Molecular Biology Section. The new Molecular Biology Section houses PulseNet activities and molecular diagnostics. We would like to welcome the following laboratorians:
- **Chun Wang** — Microbiologist V (Molecular Diagnostics Activities)
- **Adrienne Garcia** — Microbiologist V (Molecular Diagnostics Activities)
- **Grace Kubin** Ph.D. — Microbiologist V (PulseNet Activities)
- **Eric Casey** — Microbiologist IV (PulseNet Activities)
- **David Stringer** — Microbiologist III (Serotyping/PulseNet Activities)

- **Eileen Huston** — Microbiologist III (Serotyping/PulseNet Activities)
- **Ana Maria Valle-Rivera**, Ph.D. — Microbiologist VI (Team Leader)

Farewells

- **Suzanne Barth, Ph.D.**, from the Texas State Health Department, has retired as Microbiological Investigations Section Team Leader.
- **Adam Toguchi, Ph.D.**, from the Texas State Health Department, has moved to the Bioterrorism Investigations Section.
- **Jamie Munro** from the Canadian National Microbiology Laboratory has left Winnipeg to take a position as Project Manager with the Pest Management Regulatory Agency in Ottawa. We would like to thank him for his tireless efforts toward improving PulseNet Canada. He will be greatly missed by all, but we wish him and his family well.
- The new contacts are:
Lorelee Tschetter, Phone: (204) 789-5067, Email: lorelee_tschetter@hc-sc.gc.ca,

or **Jason Allen**, Phone: (204) 789-5012, Email: jason_allen@hc-sc.gc.ca

- **Thomas Donkar** from FDA/CFSAN will be attending medical school in the fall. His last day with PulseNet is June 25, 2004. Thomas has been a part of PulseNet since its inception in 1996. We will miss him, and wish him continued success.
- The new contact is: **Christine Keys**, Phone: (301) 436-2247, Email: ckkeys@cfstan.fda.gov

HOW WOULD YOU LIKE TO RECEIVE THE PULSENET NEWSLETTER?

Currently, subscribers to the PulseNet quarterly newsletter receive 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 WebBoard, please send your request to the PFGE inbox at pfge@cdc.gov with the subject line: PulseNet Newsletter.