

PulsePast to PulseNext: Database Reminders, Updates, and Future Projects



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InFORM 2013

November 21, 2013

PulsePast to PulseNext

□ PulsePast - Reminders

- SharePoint
- Uploading
- Database Fingerprint Types

□ PulseNow - Updates

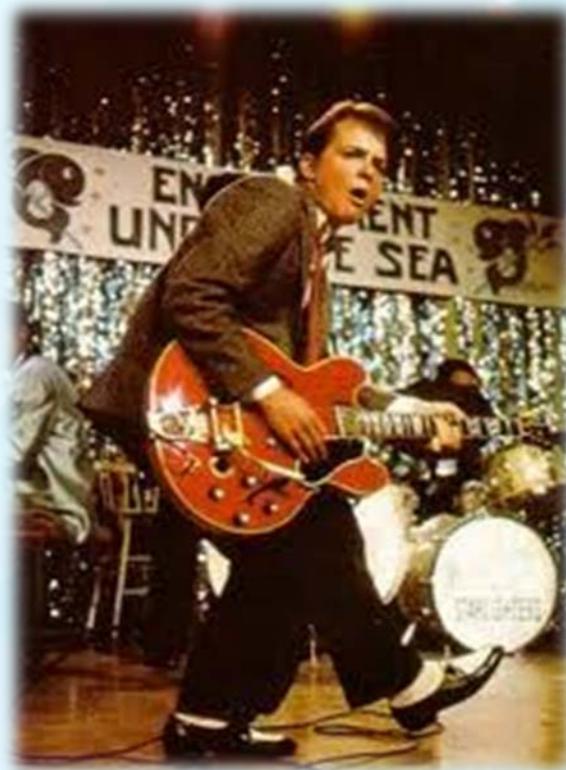
- Pattern Naming
- Assigning Cluster Codes
- MasterScripts v6.0

□ PulseNext - Future Projects

- *Shigella flexneri*
- Combining MLVA and PFGE databases
- Quick Tips
- BioNumerics v7.0

PulsePast:

Reminders...



Reminders: SharePoint

❑ Laboratorians can request access by emailing pfge@cdc.gov

- First and last name
- Email address
- Primary phone number
- Organization
- Job title
- Work address

CDC JOIN

Security ([show explanation](#))

This is a public or shared computer

This is a private computer

Warning: By selecting this option you acknowledge that the computer complies with your organization's security policy.

I am an External Partner

I am CDC staff with network access

Username:

Password:

Logon

- ❑ **Select the private computer option when logging on**
 - No time limit for inactivity
- ❑ **Subscribe to PulseNet Announcements to receive important information**

Reminders: SharePoint

- ❑ Passwords expire every 90 days for external partners
- ❑ You can change your password by clicking 'Manage your CDC JOIN password'

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[Manage your CDC JOIN password](#) (External Partners only)

Contact your sponsor to retrieve your CDC JOIN username or email CDCJOIN@cdc.gov. (External Partners only)

Reminders: Uploading

- ❑ **Do not upload duplicate database entries**
 - If you receive an isolate from another state check with that state before pulsing to make sure efforts are not being duplicated
- ❑ **When a duplicate entry is added into your database, BioNumerics automatically adds “/#” to the end of the key**
 - Uploading the duplicate entry without uploading the original entry will result in an upload without demographic information
- ❑ **If there are multiple picks from one culture, we recommend labeling them 123a, 123b, 123c, etc**
 - However, only one pattern needs to be submitted if they are the same
- ❑ **If you upload an incorrect key number contact the database team to have it corrected**

Reminders: Key Fob

- ❑ When authenticating, if asked to enter password/passcode twice, key fob may be out of sync
- ❑ Test key fob: <http://securID.cdc.gov>



CDC Home | Search | Health Topics | Centers & Projects

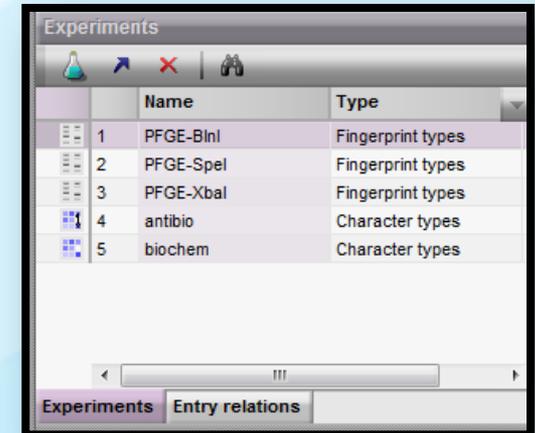
CDC RSA SecurID System

...the resource for testing, troubleshooting, and registering your key fob

Set Keyfob PIN	Set the PIN that is associated with your RSA Keyfob
Test key fob	Test validation for existing key fob holders
Report problem	Report problem or lost/stolen key fob for deactivation
User support	User support contacts by CIO
RSA SecurID info	Information on RSA SecurID authentication terminology

Reminders: Fingerprint Types

- ❑ It is important that your local databases contain only the PulseNet fingerprint types associated with the specific organism
 - If non PulseNet fingerprint types are uploaded to the national database other labs may not be able to upload



Organism	Fingerprint Types	Organism	Fingerprint Types	Organism	Fingerprint Types
<i>E. coli</i>	Xbal BlnI Spel	Non-O157 STEC	Xbal BlnI Spel	<i>Listeria</i>	Ascl Apal Smal
<i>Shigella</i>	Xbal BlnI Spel	<i>Salmonella</i>	Xbal BlnI Spel	<i>Campylobacter</i>	Smal Kpnl
<i>Shigella flexneri</i>	NotI Xbal	<i>Vibrio cholerae</i>	Sfil NotI	<i>Clostridium botulinum</i>	Xhol Smal
<i>Yersinia pestis</i>	Ascl Fsel	<i>Vibro parahaemolyticus</i>	Sfil NotI		

List of fingerprint types for each organism can be found in the MasterScripts v6.0 instructions

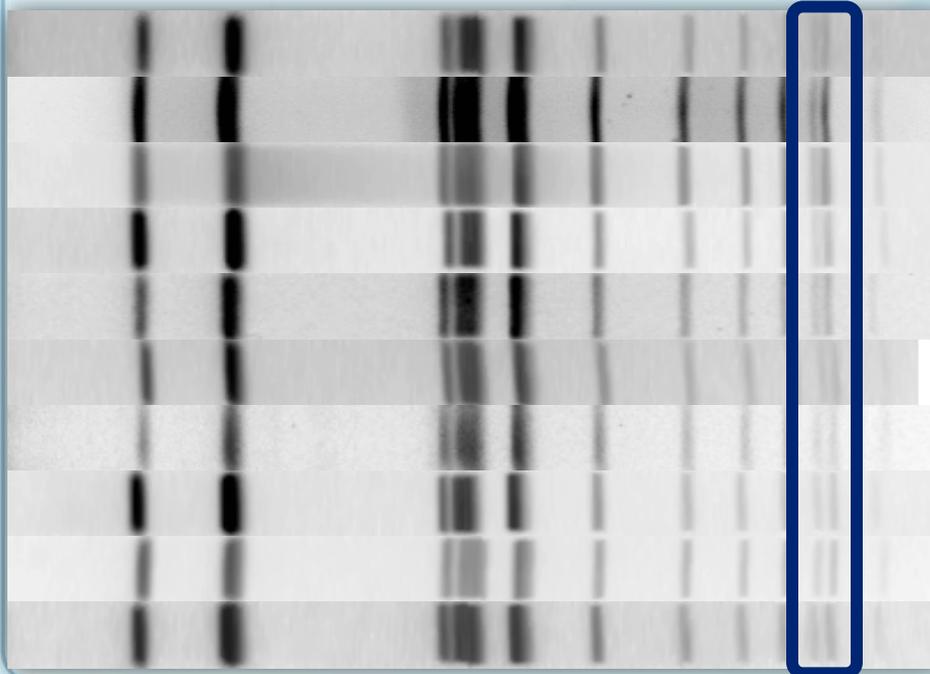
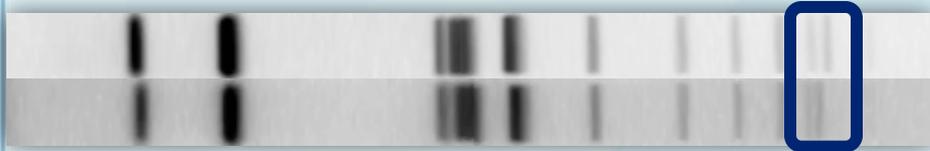
PulseNow:

Updates...



Updates: Pattern Naming

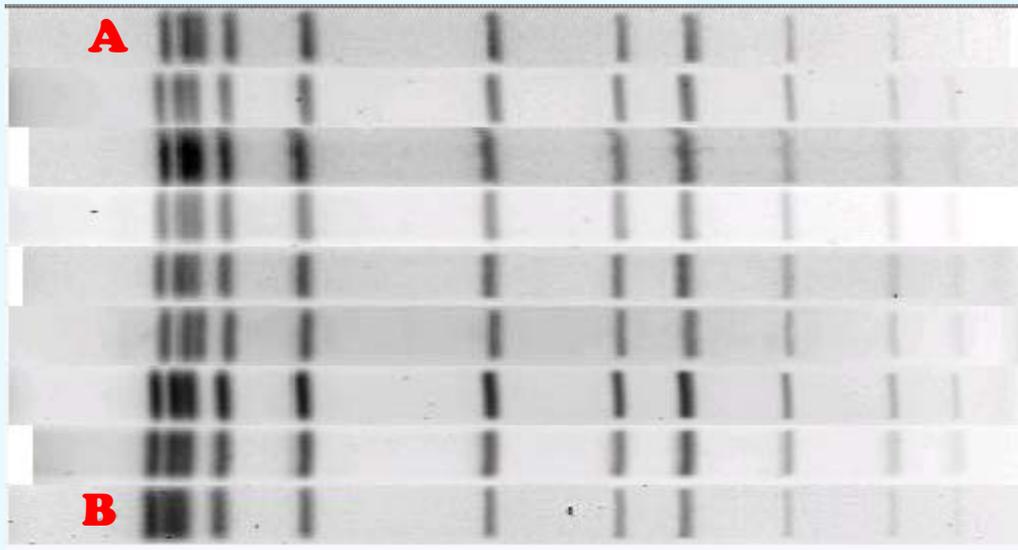
- Patterns that appear to be different in your local database may be named the same in the national database



- With only 2 representatives in your database, patterns may look different
- As more patterns are uploaded to the national database, the patterns become harder to separate
- If a lab has a question about a pattern name they should contact the database team for an explanation

Updates: Pattern Naming

□ *Salmonella* PT *BlnI* in house strain



- Patterns A and B seen side by side may appear different
- When more representatives of the same pattern are included it becomes obvious that patterns A and B are the same



Updates: Cluster Codes

- ❑ **Some clusters may have multiple serotypes or PFGE patterns**
 - Bundle files of patterns involved in clusters are saved to SharePoint under PulseNet documents
- ❑ **Cluster codes are assigned to entries once CDC epidemiologists request line lists**
 - Line lists are typically requested once per week
 - If a cluster code has not yet been assigned, labs can still post cluster matches to SharePoint

Updates: MasterScripts v6.0

- ❑ **PulseNet National Databases were upgraded to BioNumerics v6.6 at the end of September**
- ❑ **MasterScripts were mailed at the end of October**
 - File used to calculate Turn Around Time updated to include national holidays up to 2020
 - New PulseNet scripts
 - Updates to serotypes and pull down menus
 - *Shigella flexneri* scripts

MasterScripts v6.0: New Scripts

❑ Quick Cluster

- Allows you to quickly create a dendrogram based on the PulseNet standards

❑ Create Epi Chart

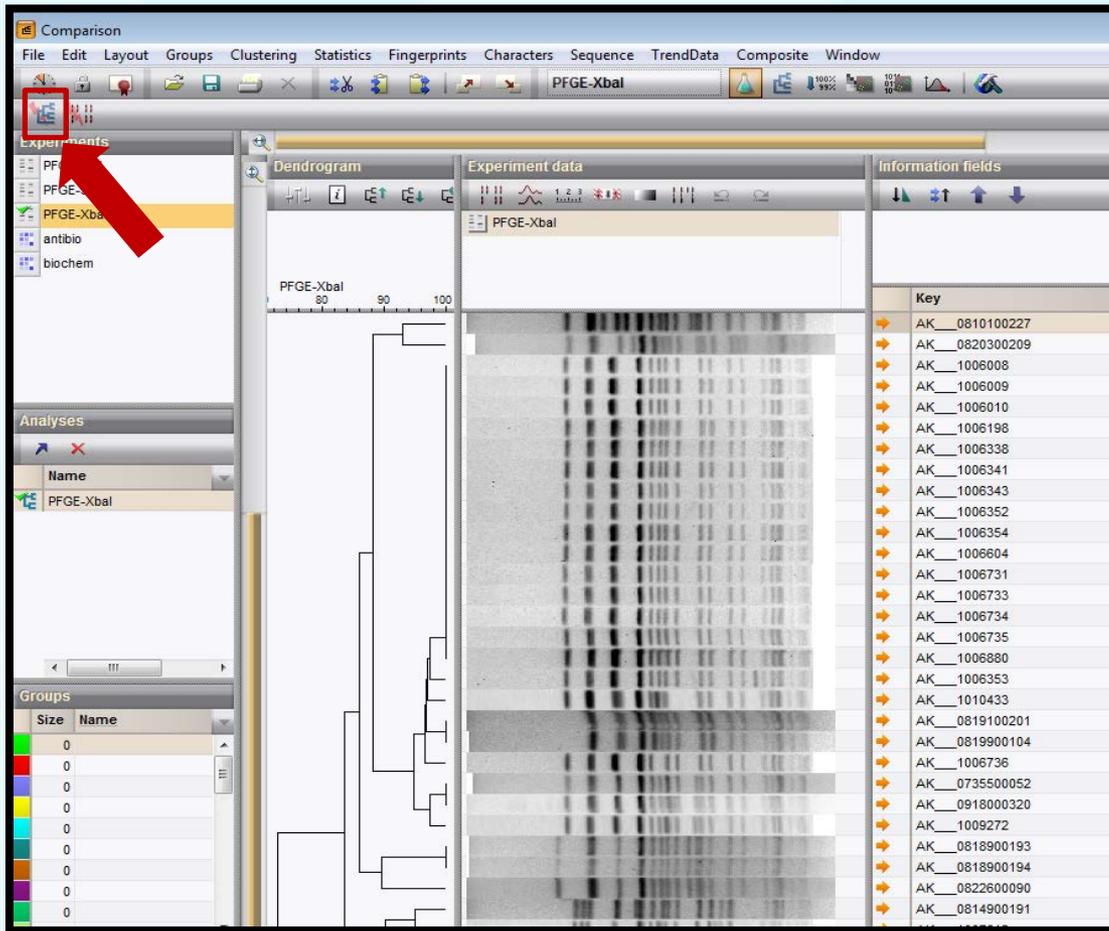
- Can be used to create a basic frequency chart in BioNumerics versions 6.0 or higher
- Uses the Charts and Statistics defaults seen in earlier versions of BioNumerics

❑ Switch to Band Editing Mode

- Script can be used to view band markings and add or delete assignments in a comparison window
- Must have BioNumerics v6.0 or higher and a connected database

❑ Download WGS_id and NCBI_ACCESSION (*Listeria* only)

MasterScripts v6.0: Quick Cluster

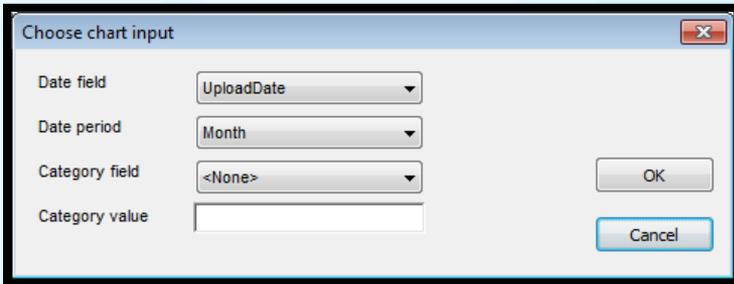


- Once you have created a comparison, click the Quick Cluster icon  found in the comparison window

MasterScripts v6.0: Create Epi Chart

BioNumerics v6.0 or higher

- Select the entries in your local database
- Select the Create epi chart icon  located on the PulseNet toolbar
- Select the chart criteria



Choose chart input

Date field: UploadDate

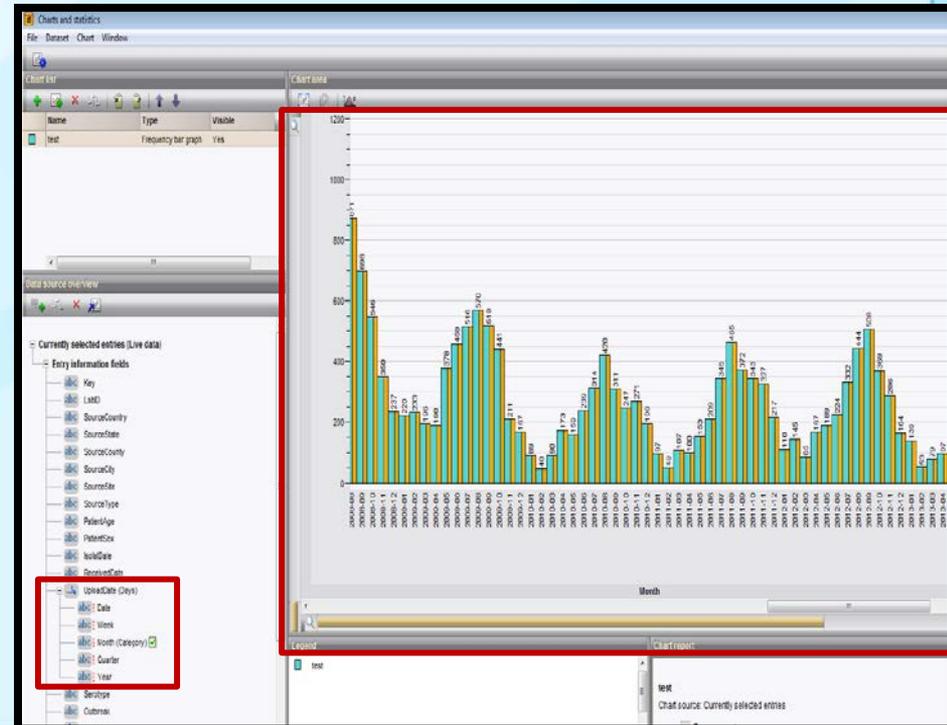
Date period: Month

Category field: <None>

Category value:

OK Cancel

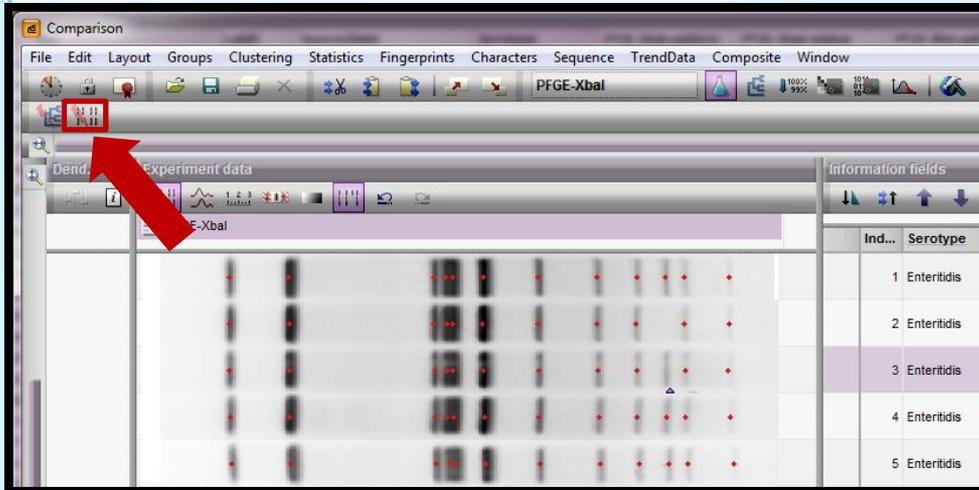
- Resulting graph is created with entry information fields converted to properly display the frequency graph



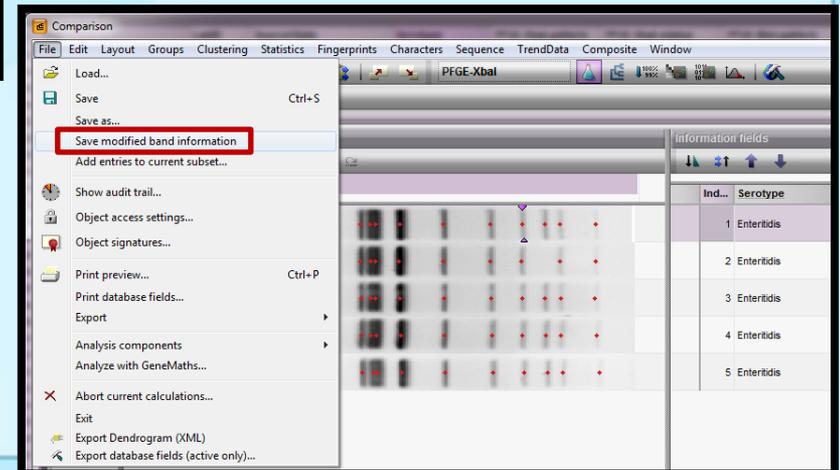
MasterScripts v6.0: Switch to Band Editing Mode

BioNumerics v6.0 or higher and connected database

- Create a comparison
- Select Switch to band editing mode  in the comparison window
- Add/delete bands using Enter and Delete on your keyboard



- Save your changes by selecting 'Save modified band information' under the file menu



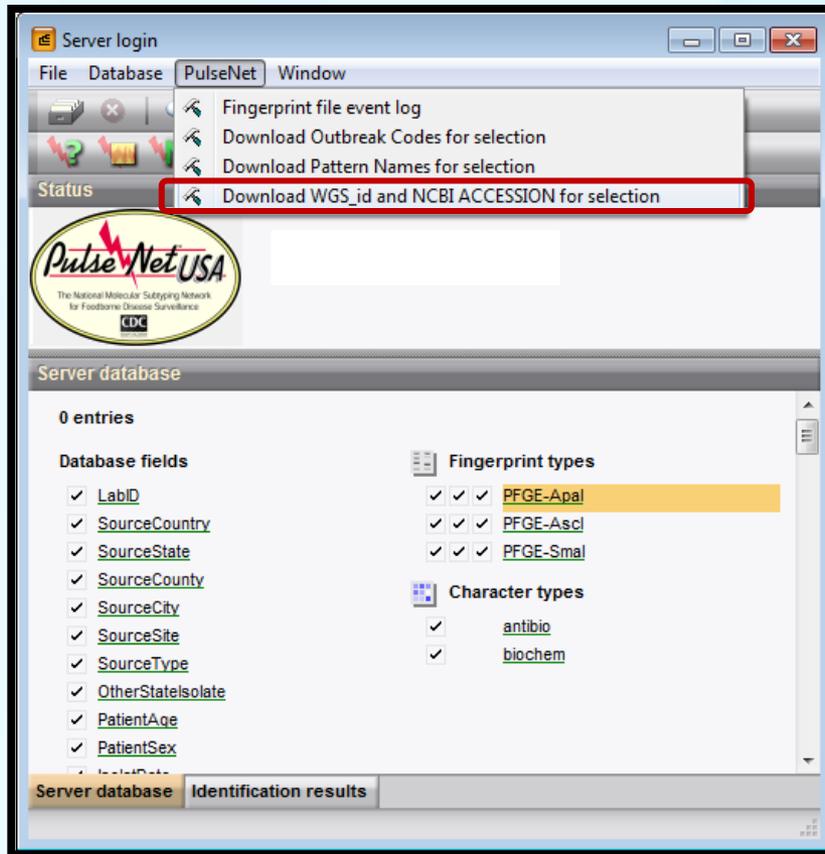
MasterScripts v6.0: Downloading WGS_id and NCBI_ACCESSION

Listeria only

- ❑ **Script allows labs to download the WGS_id and NCBI_ACCESSION identifiers for *Listeria* isolates that have been sequenced by whole genome sequencing and uploaded to NCBI (GenBank)**
- ❑ **Two new fields in your local database**
 - WGS_id: De-identifier assigned by PulseNet database manager
 - NCBI_ACCESSION: Sample id assigned by NCBI to sequences uploaded to GenBank
 - WGS_id and NCBI_ACCESSION ids were populated beginning in July
 - Both fields can be used to search and find uploaded sequences in GenBank associated with the *Listeria* isolate
- ❑ **When submitting isolates to CDC, be sure to include the PFGE isolate number on the CDC Specimen Submission form if the number is different from the Specimen ID**

MasterScripts v6.0: Downloading WGS_id and NCBI_ACCESSION

Listeria only



- Select the entry in your local database
- Connect to the server
- In the Server login window, select “Download WGS_id and NCBI_ACCESSION for selection” under the PulseNet pull down menu
- Only entries which have been sequenced and uploaded to NCBI will have these numbers

MasterScripts v6.0: Updates to Serotypes and Pull Down Menus

- ❑ Several serotypes have been added or changed in the pull down menus for *Salmonella*, Non-O157, and *Vibrio cholerae*
- ❑ Virulence marker profiles have been added for *E. coli* and Non-O157
- ❑ Always use pull down menus in the Entry Properties window
 - If a serotype is not listed in the pull down menu, type the serotype into the serotype field and notify PulseNet
 - Antigenic formulas should be typed into the serotype field and the AntigenForm field

MasterScripts v6.0: Updates to *Salmonella* Serotypes

❑ Serotypes removed

- Untypable: can use Undetermined or Serotype pending
- I 4,[5],12:b:- L(+) tartrate +: report as I 4,[5],12:b:-
- Serotype variants, ex. Typhimurium var. O 5 - (Copenhagen) should be reported as Typhimurium

❑ Several serotypes will be merged

- For example, Istanbul will be merged with Hadar and all patterns will now be coded as TDK
- Pattern changes are posted to SharePoint under Library of PulseNet Documents – Reports – Combined PulseNet Patterns

❑ Older entries in the national database with serotypes no longer in use will be changed to the corrected serotype

❑ Full list of changes can be found in the MasterScripts v6.0 instructions

PulseNext:

Future Projects...



PulseNext: *Shigella flexneri*

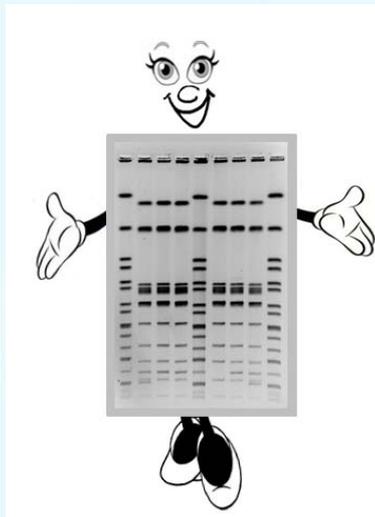
- ❑ **Starting in 2014, *Shigella flexneri* should be run using the protocol for *Shigella flexneri* and patterns should be uploaded to the *S. flexneri* National Database**
 - Primary enzyme is *NotI* and secondary enzyme is *XbaI*
- ❑ **Certification for *S. flexneri* will be analysis only**
 - Will start accepting certifications at the beginning of 2014
- ❑ **If you are interested in getting certified, email pfge@cdc.gov**
- ❑ **For now, continue uploading *Shigella flexneri* patterns to the *Shigella* National Database**

PulseNext: Combining PFGE and MLVA

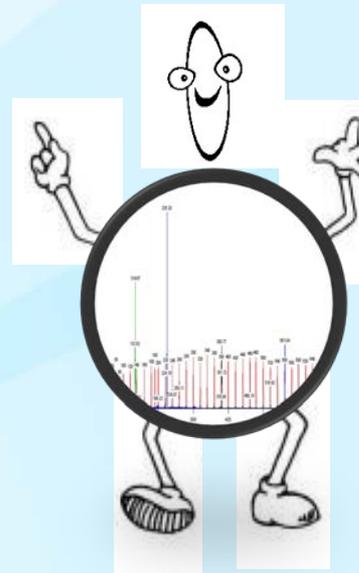
- **Currently working on combining PFGE and MLVA *E. coli* and *Salmonella* databases**
 - PFGE and MLVA data will be uploaded to the *E. coli* and *Salmonella* National Databases
 - CDC will be testing scripts for the next several months
 - Key numbers should be the same for PFGE and MLVA in order for entries to link correctly

PulseNext: Quick Tips

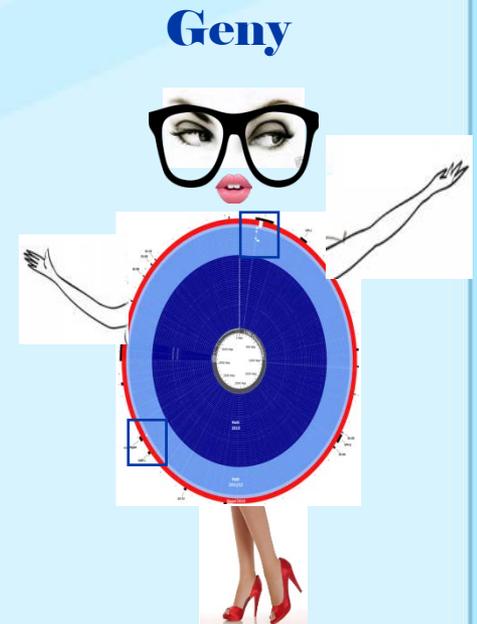
- ❑ **Emails containing helpful tips will be sent periodically**
 - Information in the emails will pertain to lab and database work, including PFGE, MLVA, and WGS
 - Brought to you by...



TIFFany



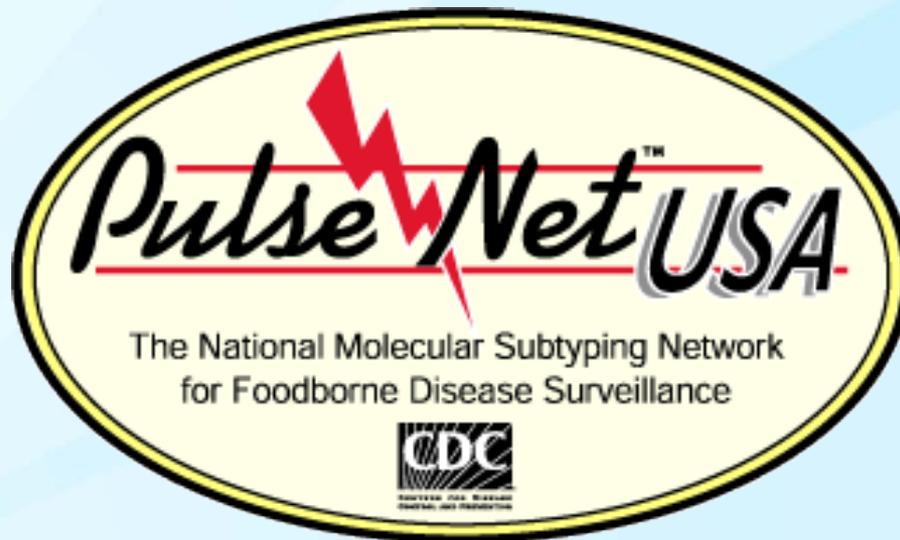
MLVAn



PulseNext: BioNumerics v7.0

- ❑ **At this time, please do not upgrade to version 7.0**
 - Version has not been tested at CDC
 - Requires connected databases
 - MasterScripts v6.0 are not compatible

- ❑ If you have any questions, comments, or suggestions please contact us at 404-639-4558 or email PFGE@cdc.gov



Thank you

