## CIFOR Lab-Epi Integrated Reporting Software

# 2014



## User Guide

## Introduction

A limited number of public health foodborne disease programs receive daily reports from their public health laboratory, and fewer still receive the information in a format which facilitates rapid identification of foodborne disease clusters. Programs with good data handling practices are generally more successful at identifying and successfully investigating in-state and multistate foodborne disease outbreaks. Rapid identification of foodborne disease clusters improves case recall during investigations and increases the chance that an outbreak will be solved and public health interventions will be successful.

Under the auspices of the Council to Improve Foodborne Outbreak Response (CIFOR), the Association of Public Health Laboratories (APHL) worked with a contractor and several pilot sites to develop software that facilitates structured reporting of laboratory data, leading to the rapid identification of foodborne disease clusters by public health personnel. The software has been designed to be database independent and platform independent, and represents a universal technology which can be used to improve outbreak detection until automated and continuous electronic epidemiology/laboratory links and cluster detection and evaluation mechanisms can be established. The software can also be used to share information between jurisdictions for regional surveillance, and may be modified to accept data from both epidemiology and laboratory systems to create integrated reports.

#### **Product Overview**

The CIFOR software is an open source application that accepts laboratory data files in a prescribed format (Table 1). The application analyzes patient laboratory results (e.g. serotype, subtype and other) to identify patterns or clusters that would suggest a possible outbreak or situation of interest. The application is intended as a tool for public health personnel conducting disease surveillance for foodborne pathogens to more quickly identify potential clusters of enteric illness **within their own jurisdiction**. It is a standalone, desktop application that does not use a web browser or internet access and does not share data with any other application.

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## 1. Software Installation

## a) Technical Requirements

The CIFOR Lab-Epi software is written in Java as a desktop application. The application will reside as a Java jar file (Java archive) on a single PC. The PC must have the standard Java JRE installed in order for the application to run. The Java JRE should be the most current version.

The CIFOR application will run on any PC with a Windows Professional Operating System; XP, Vista, or 7 and at least 4mb of memory. If possible, use the most current Microsoft operating system (Windows 7) and a processor of at least Intel i5 capability to provide the best performance and user experience.

The user PC must also have Microsoft Excel installed in order to utilize options that allow a report to be displayed as an Excel spreadsheet.

The database manager used is Oracle 11g Express Edition. This version of the Oracle database manager can currently be downloaded from the Oracle website and is free of charge when used for software development and pilot testing. Each jurisdiction should read and understand the user license prior to downloading and using the software. Data will not be encrypted in the CIFOR database. Users will not need administrator rights to use the CIFOR application; however, administrator rights will likely be needed to install the Oracle database. As updated versions of the database are released, administrator rights may also be needed to run the new database scripts. Users will be notified as new versions of the database become available.

The CIFOR application runs as a desktop application that does not require use of a web browser or the internet. Access to the user's internal network is desirable in order to more easily access CSV files that have been extracted from BioNumerics and/or the Laboratory Information Management System (LIMS). The CSV files should be saved to a directory on the PC which the user will then import into the CIFOR database. The CIFOR application is password protected.

## b) Creating the Directories

Use Windows Explorer to create the following directory and subdirectories on the C: drive of your PC.

C:\CIFOR

C:\CIFOR\Database\_Scripts

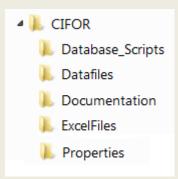
C:\CIFOR\Datafiles

C:\CIFOR\Documentation

C:\CIFOR\ExcelFiles

C:\CIFOR\Properties

When you have completed the directories, Windows Explorer should show a directory structure like the image below.



## c) Downloading the CIFOR Software

The CIFOR Lab-Epi Software can be accessed via the CIFOR website at <u>www.cifor.us</u>. On the CIFOR home page click on "Current Projects" on the left hand navigation bar and then click on "Epidemiology-Laboratory Integrated Reporting Project".

You will find the following files on the project page. Copy each file to the directory on your C: drive indicated after the file name below.

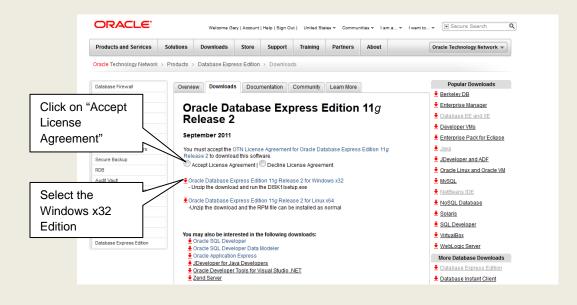
- I. CIFOR.jar copy to C:\CIFOR
- II. CIFOR\_UserProperties copy to C:\Properties
- III. CREATE\_CIFOR\_V3.sql copy to C:\CIFOR\DataBase\_Scripts
- IV. CIFOR\_USER\_GUIDE.pdf copy to C:\CIFOR\Documentation
- V. CIFOR\_Data\_Mapping.xlsx copy to C:\CIFOR\Documentation

## d) Installing the Oracle Database Manager

- i. Follow the steps below to download and install the Oracle Express Edition 11g database.
  - 1) Open your web browser and go to the Oracle website using the following link.

http://www.oracle.com/us/downloads/index.html

Under Database select - ->Database 11g Express Edition. This will bring you to the following page:



The next screen will ask you to Login to the Oracle website. If you don't already have an Oracle account (it's free), the site will ask you to create an account. Once this step is completed, the download process will begin.

DRACLE'	
	Sign In
	Username Lost Username? Password Lost Peasword? Sign In Don't have an Oracle account? Sign Up for a free Oracle Web account Need Help?
	Powered by Oracle Access Manager 11g
partners, if authorized, is also subject to the terms of you	Lusers. Use of this site is subject to the Legal Notices, Terms for Use and Privacy Statement located on this site. Use of the site by customers and contract(s) with Oracle. Use of this site by Oracle employees is also subject to company policies, including the Code of Conduct. Unauthorized of your authorization to use this site and/or of all and criminal penalties.
ardware and Software gineered to Work Together	About Oracle   Contact Us   Legal Notices and Terms of Use   Privacy Pr

2) You will now see a screen asking what to do with the download file. Click OK to save the file.

Opening OracleXE11	2_Win32.zip	
You have chosen to	open	
l OracleXE112	_Win32.zip	
	mpressed (zipped) Folder (312 MB) ownload.oracle.com	
What should Firefo	ox do with this file?	
Open with	Windows Explorer (default)	•
Save File		Click "OK"
Do this <u>a</u> uto	omatically for files like this from now on.	
	ОК	Cancel

3) After the download is complete, create a new directory on your C:/ drive, called Oracle. The directory should be C:/Oracle. Then copy the Oracle file (OracleXE112\_Win32) from your download directory to the C:/Oracle directory. Once the file has been copied to the new directory, you can double click on it. You will see a subdirectory called DISK1. Double click on the DISK1 directory and you will see a file called setup, which is an application file. Double click on the setup file to begin the installation.

Oracle Database 11g Express Edition - InstallShield Wizard				
Preparing to Install				
	Oracle Database 11g Express Edition Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.			
$\geq$	Extracting: Oracle Database 11g Express Edition.msi			
	Cancel			

4) Now you will see a screen that will begin the installation of the Oracle 11g Express Edition database on your PC. Click on the Next button to begin the process.

Ora	cle Database 11g Express Edi	tion - Install Wizard
	DATABASE EXPRESS EDITION	Welcome to the InstallShield Wizard for Oracle Database 11g Express Edition The InstallShield® Wizard will install Oracle Database 11g Express Edition on your computer. To continue, click Next.
		Click "Next"
		Back Next Cancel

5) A screen will ask you to accept the license agreement. Click on the "I accept the terms in the license agreement" button. Now click on the "Next" button to continue with the installation.

(	Oracle Database 11g Express Edition - Install Wizard
	License Agreement Please read the following license agreement carefully.
	Oracle Technology Network Developer License Terms
Click "I accept"	Export Controls Export laws and regulations of the United States and any other relevant local export laws and regulations apply to the programs. You agree that such export control laws govern your use of the Program (including technical data) and any services deliverables provided under this agreement, and you agree to comply with all such export laws and I accept the terms in the license agreement I do not accept the terms in the license agreement
	InstallShield Cancel

6) Now you see a window that is asking you to choose a destination location for the Oracle Express Edition software. Leave the default value and press the "Next" button to continue the installation.

Oracle Database 11g Express Edition	- Install Wizard		
Choose Destination Location		08	ACLE
Select folder where setup will install	files.	PAT	
Setup will install Oracle Database 1	1g Express Edition in the followir	ng folder.	
To install to this folder, click Next. To	o install to a different folder, click	Browse and select another folder	
Oracle Database 11g Express El	dition	563556 K	
Destination Folder			
C:\oraclexe\		Browse	Click "Next"
Space Required on C:	563556 K		
Space Available on C:	366007996 K		
	Back	Next Cancel	

7) Now you will get a screen asking for the password you want to use for the CIFOR database. This password will be used for both the SYS and SYSTEM database accounts. (Use CIFOR as the password for both accounts.) After you have entered your password, be sure to record it for later use, and then click the "Next" button.

Oracle Database 11g Ex	oress Edition - Install Wizard	
Specify Database F	°asswords	DATABASE Extress sonon
Enter and confirm pass SYSTEM database ac	words for the database. This password will be used for bot counts.	h the SYS and the Enter the Password (Use
Enter Password	•••••	CIFOR)
Confirm Password		Confirm the Password (Again use CIFOR)
InstallShield	Back Next	Cancel
	Page 9	Click "Next"

8) On the next screen, click the "Install" button to begin the installation.

Oracle Database 11g Express Edition - Install Wizard	X	
Summary Review settings before proceeding with the installation.	CRACLE D A T A B A S E EXPRESS EDITION	
Current Installation Settings:		
Destination Folder: C:\oraclexe\ Oracle Home: C:\oraclexe\app\oracle\product\11.2.0\server\ Oracle Base:C:\oraclexe\ Port for 'Oracle Database Listener': 1521 Port for 'Oracle Services for Microsoft Transaction Server': 2030 Port for 'Oracle HTTP Listener': 8080	*	
•	Clic	k "Install"
InstallShield Back Install Car	cel	

9) Now the actual installation of the Oracle 11g software will begin. You will see the following screen with the progress bar showing progress thru each of the database components.

Oracle Database 11g Express Edition - Install Wizard	X
Setup Status	CATABASE EXPRESS EXTION
The InstallShield Wizard is installing Oracle Database 11g Express Edition	
InstallShieldCan	cel

10) Depending on the operating system on your PC, it is possible to see an error message like the following one. Just click on the "OK" button to continue the installation.

Error	
The installer is unable to instantiate the file C:\Users\jonesg1\AppData\Local\Temp\{86ECF9C3-9608-4BE2-9 5EA-DF8028CE9E47}\KEY_XE.reg. The file does not appear to exist.	Click "OK"
ОК	

11) The installation process will continue.

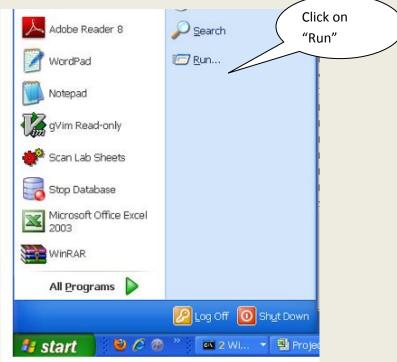
Oracle Database 11g Express Edition - Install Wizard	X
Setup Status	CRACLE DATABASE EXPRESS EXTION
The InstallShield Wizard is installing Oracle Database 11g Express Edition	
Configuring Database	-
InstallShield	Cancel

12) When the following screen is displayed, the installation process is complete and you can click the "Finish" button. The Oracle 11g database software is now installed and ready for use.

Oracle Database 11g Express Edit	ion - Install Wizard
	InstallShield Wizard Complete
	Setup has finished installing Oracle Database 11g Express Edition on your computer.
DATABASE EXPRESS EDITION	
	Click "Finish"
	Back Finish Cancel

## d. Creating the CIFOR Database

- i. Once the Oracle 11g database manager has been installed, you will create the CIFOR database and all of the database tables.
  - 1) Follow the instructions in step ii if your computer is running Windows XP or Vista.
  - 2) Follow the instructions in step iii if your computer is running Windows 7.
- ii. Windows XP or Vista.
  - 1) Click on the "Start" button on the bottom of your Windows screen then click on the "Run" icon.

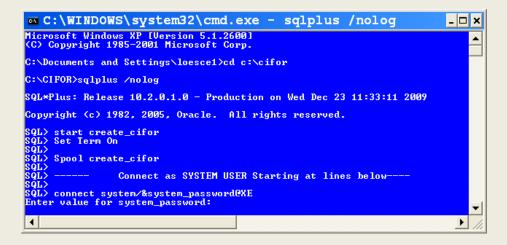


2) A command box (like the one below) will appear. Type "cmd" in this window and click "OK".

Run	? 🛛
-	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	zmd 💌
	OK Cancel <u>B</u> rowse

Now you will get a Windows "dos" prompt. Enter the directory name where the CIFOR database script is stored, e.g.; cd c:\CIFOR\database\_scripts.

- 3) Type "dir" to see the directory contents.
- 4) Type "sqlplus /nolog" as shown below and hit "enter" on your keyboard.
- 5) Type "start create\_CIFOR\_11g.sql" and hit "enter" on your keyboard.
- 6) You will be prompted for the system password. If you used CIFOR when you loaded the Oracle Express database that is what you will enter. **NOTE: Passwords must be in upper-case!**
- 7) Now the script will run and the CIFOR database and all of the tables will be created.

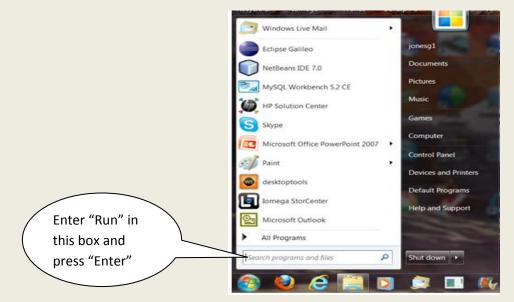


### iii. Windows 7.

1) Click on the "Start" button on the bottom of your Windows 7 screen.



 The following menu will appear. Now enter "Run" in the "Search programs and Files" box.



 The SQL Command Line window will appear. Enter the following command: start c:\CIFOR\database\_scripts\create\_CIFOR\_11g.sql

Then press "Enter". The script to create the CIFOR database will run.



4) You will be prompted for the system password. If you used CIFOR when you loaded the Oracle Express database that is what you will enter. NOTE! Passwords must be in upper-case.



- 5) Now the script will run and the CIFOR database and all of the tables will be created.
- iv. Final step in order to run the CIFOR application.
  - 1) The CIFOR application file was downloaded in step 1 and should be located in the C:\CIFOR directory. You can check the CIFOR directory's using Windows Explorer.
  - 2) Set up a CIFOR shortcut on your desktop to make it easy to start the CIFOR application:
    - a) Using Windows Explorer, go to the C:\CIFOR directory.
    - b) Look for a CIFOR.jar file. Right click on this file and select "Create shortcut" to put a shortcut icon on your desktop. You can call it "CIFOR".
  - 3) Run the CIFOR application by simply clicking the CIFOR icon on your desktop.
  - 4) Refer to section 3 of the CIFOR Users Guide for information on using the CIFOR application.
  - 5) Use the C:\CIFOR\Datafiles directory to store the files you will be importing to the CIFOR database.

## **2.** Creating the Import File

## a. The File Format

The data elements that will be used to create the import file have been pre-determined, and include basic case and specimen identifiers, standard demographic information, and result information such as pathogen, serotype, and PFGE pattern (See Table 1 below).

The Import File must be formatted according to Table 1. Fields must ordered as they appear in the table, be pipe "|" delimited and must meet the field size and field type indicated. Internal checks are in place within the CIFOR Import Program to validate the presence of data for required fields and the content of the fields where appropriate (e.g. date fields must be valid, etc.).

**NOTE:** It is recommended that users include all required fields in their import files. Records will <u>not</u> be imported into the database without a valid "Date Reported" as the resulting reports are sorted via this data element.

Column Name	Description	Field Size	Field Type	Optionality	Example
Lab Specimen ID	Lab accession number	10	Alphanumeric	Required	2011001011, N01E001234
Submitter Specimen ID	Submitter specimen ID	20	Alphanumeric	Optional	
Specimen Source	Whatever source from which organism was isolated	20	Alphanumeric	Required	Stool, urine, blood, etc
Date Collected	Date specimen was collected	8- mmddyyyy	Numeric	Required	09072011
Date Received	Date specimen was received by the PHL	8- mmddyyyy	Numeric	Required	09152011
Date Reported	Date result was reported by the PHL	8- mmddyyyy	Numeric	Required	10012011
Primary Test	Primary test performed; Agent + Method	60	Alphanumeric	Optional	Enteric Culture
Organism	What was identified; agent name, genus and species	80	Alphanumeric	Required	<i>Salmonella</i> Newport
CDC Primary Enzyme Pattern	CDC Primary Enzyme Pattern	30	Alphanumeric	Required	

Table 1. Data Elements Required for the CIFOR Lab-Epi Software Input File

## **CIFOR User Guide v 1.0**

CDC Secondary Enzyme Pattern	CDC Secondary Enzyme Pattern	60	Alphanumeric	Required	
Other Result	Additional result or subtype	80	Alphanumeric	Optional	Stx1 +, stx2
Submitter ID	Submitter ID, NPI, etc	20	Alphanumeric	Optional	
Submitter Name	Submitting hospital, clinic, doctor, or veterinarian	50	Alphanumeric	Optional	
Submitter State	Submitter state abbreviation	2	Alphabetic	Optional	
Patient ID	Patient ID provided by the submitter	20	Alphanumeric	Optional	
First Name	Patient first name	20	Alphanumeric	Required	
Middle Name	Patient middle name	20	Alphanumeric	Required	
Last Name	Patient last name	20	Alphanumeric	Required	
Multiple Unit	Patient apartment, building, PO, or suite number	30	Alphanumeric	Optional	
Street Address	Patient Street address	30	Alphanumeric	Optional	
City	Patient City name	30	Alphanumeric	Required	
State	Patient state abbreviation	2	Alphabetic	Optional	MN, TN, GA, etc.
County	Patient County	30	Alphanumeric	Required	County / Parish
Postal Code	5 digit patient postal code	5	Numeric	Optional	
Postal Code+4	4 digit patient postal code	4	Numeric	Optional	
Gender	Patient gender (M-male, F- female, O-other)	1	Alphabetic	Required	
Date of Birth	Patient DOB	8- mmddyyyy	Numeric	Optional	
Age	Patient age	3	Numeric	Required	
CDC Cluster Code	CDC assigned code for multi- state outbreak investigation	20	Alphanumeric	Optional	
Local Primary Enzyme Pattern	Local Secondary Enzyme Pattern	60	Alphanumeric	Optional	

Local Secondary Enzyme Pattern	Local Secondary Enzyme Pattern	60	Alphanumeric	Optional	
Region	Locally defined geographic area	20	Alphanumeric	Optional	

## **b.** Pulling the Required Data Elements for the Import File

- i. You may need to pull required data elements from both BioNumerics and your LIMS.
- ii. A data mapping spreadsheet has been created from information from the original pilot sites that provides examples of possible variable names and locations (e.g. BioNumerics database or LIMS) for required data elements.

## **3.** Personalizing the Database

- a. Properties File
  - The CIFOR application uses a special file called a "properties file". When you installed the application on your computer, one of the files you copied was called "CIFOR\_UserProperties". This file contains some of the headings for the Cluster Report which can be changed by the user to better describe the data.
  - ii. Here is a list of the contents of the file:

# This file contains properties that are user definable. A property may # be changed by replacing the text located after the "=" sign. This is # the value that the CIFOR Program is looking for. # # Make sure a property line is not deleted! # # The "RegionName" parameter is used to define the text that describes # what the region field in the database is used for. For example, # the value could be "Region", "Territory", "District", or any value # that describes how the data in the field will be used. RegionName = Region # The "Primary Pattern" is used to select which value is displayed and

# printed as the Primary Pattern on the result record. If the value of

# "PrimaryPattern" is "CDC" then the CDC Patterns will be displayed as

# the Primary Patterns on the result line. If the "PrimaryPattern" is "Local"

# then the local patterns will be displayed as the Primary Patterns on the result line.

#

# The "PrimaryPattern" can have a value of "CDC" or "Local".

\*\*\*\*\*

PrimaryPattern = CDC

## \*\*\*\*\*

# The "OnlyShowPrimaryPattern" value determines if only the pattern

# selected as the primary pattern (CDC or Local) will be displayed, or

# if both patterns (CDC & Local) will be displayed. If the value of

# "OnlyShowPrimaryPattern" is "Yes" only one line (the result line) will

# be displayed. If the value of "OnlyShowPrimaryPattern" is "No" then

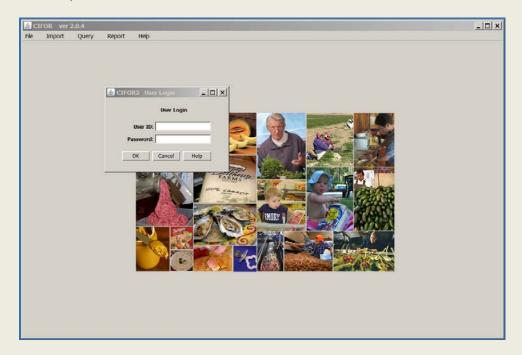
# the result line will display the # (CDC or Local) and a second lin #	pattern selected as primary ne will display the other pattern.
, ,	n" can have a value of "Yes" or "No" ###################################
OnlyShowPrimaryPattern = <b>No</b>	
######################################	
ReportHeaderPrimaryLocal ReportHeaderSecondaryLocal ####################################	= Local Primary Enzyme Pattern = Local Secondary Enzyme Pattern ####################################

- iii. To make changes, open the file "C:/CIFOR/Properties/CIFOR\_UserProperties" using Notepad. The items you see in **bold** are the only items you can change.
- iv. The first item you can change is the description for the "Region". This field is used as a heading on the Cluster Report, so if you wanted "Region" to be called "Territory", you would simply replace "Region" with "Territory".
- v. The second item you can change is not a report heading, but an identifier for which pattern should be displayed as the primary patterns on the report. If you use your local patterns, then you should change the identifier from "CDC" to "Local".
- vi. The third item you can change is called "OnlyShowPrimaryPattern" and has a value of "Yes" or "No". By default it is set to "No". If you want to show both the CDC and Local patterns, leave this value set to "No". If you only use one pattern, then change this value to "Yes".
  Note! You will want to make sure that you have your primary pattern set correctly to ensure you show it on the report. For example, if you only use the CDC pattern, then make sure that the "PrimaryPattern" is set to "CDC" and the "OnlyShowPrimaryPattern" is set to "Yes".
- vii. The final items you can change are used for the Cluster Report headings for the CDC and Local Patterns. If you use a different description for these fields, you can change them to correspond with your descriptions. For example, if you call your local primary enzyme pattern "Lab Primary Pattern" then change "Local Primary Enzyme Pattern" to "Lab Primary Pattern". Do the same for any of the other pattern names.
- viii. Once you have finished making your changes, save the file and run the Cluster Report to see how you changes worked.

## 4. Using the CIFOR Software

## a. User Login

i. After clicking on the desktop icon to start the CIFOR application, the user will see the following screen. Before the application can be used, you will have to enter a User ID (CIFOR) and a Password (CIFOR) in the login screen. When the User ID and Password have been entered, press the OK button on the User Login screen and the main CIFOR menu will be activated and ready for use.



## b. Importing Data

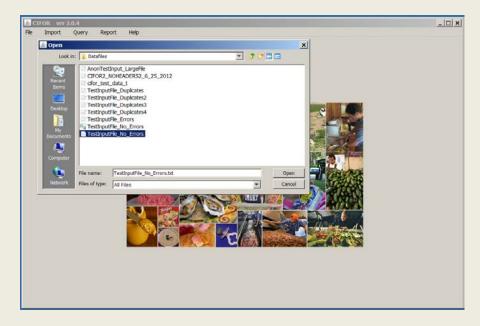
1) To import data into the CIFOR database, select "Import" on the menu bar. A sub-menu will appear, then select "Import a File" to start the Import process.



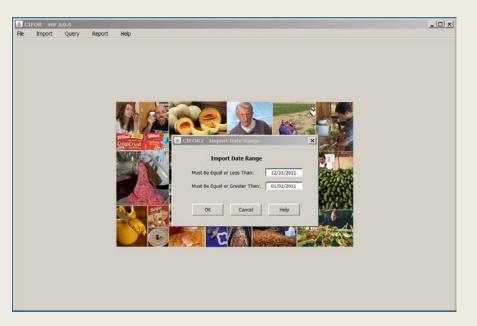
b) A Parameter Screen will be displayed asking for the file to be imported. Click the Browse button.



c) After clicking the Browse button, select the file to be imported. A list of files located in the C:\CIFOR\Datafiles directory will be displayed by default. You may also select the file from your server if that is where you choose to keep the files (e.g.; S:\). Select the file you wish to import by clicking on the file to highlight it and then clicking the Open button at the bottom of the Parameter screen (double clicking the file name will also open the file).



d) After selecting the file, a parameter screen will be displayed asking for the import date range. The import date range is based on the Date Reported (the date a result is reported by the public health laboratory) for each record. Those records for which the Date Reported falls outside of the selected import data range will not be uploaded.



e) After selecting the file to be imported, a new screen will be displayed that allows the user to choose whether to view the file, upload the file, cancel the import operation, or ask for Help.



f) View- The view function allows a user to double check that the desired file has been selected and is acceptable (e.g. populated, contains the required fields, etc.) before beginning the import process. Note, this is only a display window and no records can be selected or updated.

	CACIFORIZA		les) Test In	utile li	o Empre 1			View Data	Files											-
	07/09/2012																			
Accession #	Subm Spec #	» т.,	Data Col	Date K_	Date R.	Primary Test	Organism	FT/IN CR2y/THE FIRST.	Sec Enzyme Pattern	Other Result	Schr z	Subm Name	Sub St	Paterr.	PERM	PNO	I PLST Norse P Mu	JFR.	FOR	L P I
wiR000002	No/R300302	1	01052011	01053011	31052011	Enteric Bacteviclopy	Eacherichia colinoni-0157 isolated with Sh.	E coli ron-0117	E0:0014579	#194826.3035 Stx 2 pegiture	lac lac	MORSON-M.	TN	FID0001	Convid		1000	020 14	Johneon	71
4of73000003	NoEP.300303	1	01392911	01303611	31302011	Enteric Bacteridept	No Salmanela Shigela Bacherichia Itti 015	E. col G 157:H7	E00001 \$231	EINA26.3238 Dix 182 positive	Sec.lac	MOKSON M.	TN.	F3D0002	600		Green	\$4021	Lener City	7
NER1000004	NUCR 2000004	E.	01382911	01303011	11992011	Diters Saclerskop	No Shige task: 1 or 2 DNA detected by POR.	E coliron-0157		50x 2 positive	57	MADEON C	TN	P3200003	24	8	Sec.	13295	OAnter	2.4
WELIXONS	NELXOXS	5	03342921	03053011	31253011	Enteric Bacterickopy	No Salmonella Stupella Escherichia col 015.	E colinon-0157		Six Loostve	lar ser	MORSON	191	#200004	Nerv		Brown	34222	Prev Finit	(N)
au£0.000006	14460 300306	1	030-0811	03053615	21262031	Enteric Bactericlogy	No Shiga toxin 1 or 2014 detected by PCR.	E calime-0197		Ste 1 positive	Jackson .	MOGON BE	m	F100005	2.0		3.40	536.00	Wilsawide	ant.
w#11000007	Null1300307	1	C33-Q811	03053011	35272031	Enteric Bacteridage	he falmenets Digels Extention of OIL.		-	Ets 2 positive	backsont	MOREN RE	TH	7200004	fits.	c	Johnson	12545	. Sevends	2
10073.0000CD	with booton	5	032-0211	03050011	35272011	friters factorising	The Stringe South 1 or 2 Drive detected by PCR.	E.colinon-0117		Star spositive	Sec.lec.	MOISON-N	731	P200007	Abert		Smith	13:28	dudak	2
alR000039	NetRacoxy	1	04172911	04172011	34172011	Enteric Eacterickopy	No Salmonella isolated.	E.colinon-0157		Sta 1 postive	SAC MC	MORSON-N	28	FEXILI	detta	D	Jackson	#3225		DN.
CR 0000 FB	NetR200310	1	90162812			Enteric Bacterickopy	Bachevichia coli 0157907 soluted with Ship		-	Six 1 positive	lac.inc	MOSONN	TH		Churk	<b>F</b>	Arderson	#1227	Arecola	TN
eE3 0000 11	266ER200011	1	11052011	11123013	11122011	Enteric Eacteridage	No Salmonela isolated.	Salmonofia Tuphimunum			23	DHER COUNT.	TN	FEDODAL	Conna		Arders	20212	. Knowledge	-
PE 1000 12	1000012	6	11042011	11122011		Enters Sacterskopt	The Salman et a training.	Salvered a Type multure			21	DIFFE COURT	79	FIDODU	Thurd		Bendery	1068.5	mode	-
eE4000013	NeER 200223	1	11092011	11122011		Criteri Saclerskor	teo Salmonella solated.	Salmonella Tuchenunum			23	DIER COUNT.	IN	P220012	Forence		Ford	5325.5	Conde	N
F8000014	NeF81000114	÷.	11062011			Enteric Racterization	his Galmonella sociated.	E.col-015747	Fe-0101 0024	FI34436.3436.56x2.peetter	W.W		751		Greg	-	Dodge		Crocolle	1
Ja 2000.01%	Puell1300215	1	11170011	11100011	11130001	Enteric Bacteriology	No Calmerela Origila fatherithia Isk D15	E col 0 157H7	Ex+0(01.0224	Elsonali. 3436 Div 2 peeting	San Jan	MOREN M.	Th		Harrist	-	Harley	3670 6	diratei	2
£310001.16	1408200236	£-	01202011			Drives Decimitation	Sesting suspended per Provider request.	Templa enterscalition			Lash.	wescowen			24+	r	Rei	2670		N.
stR000017	NetR200017	1	02612011	0.8023011	12072011	Enteric Bacterickopy	Testing suspended per Provider request.	Carevisherier setuni	-		wsh		M	FEXED	Jacon	1	Steoman	24625	Rutindar	D.
AD MODE NO.	NARRINGOUN	6	02032011			Enteric Bactevictopy	Testing suspended per Provider request.				high		M		Kely		Green		Buff City	-
d21000130	NetR200219	£	01302911			Enteric Bacteridagy	Testing suspended per Provider request.	Vibric carahaenolyticus			hah		145		Laure	c	Laverdar	1000	Johnson ()	5
1000000	2607810000300	6	01302911			Enters Bacteriolagy	Textre supervised per Provider request.	Shafe some			wah		M		Natio		Doors	54717		5
ee-R000021	Net51200221	÷-	01.502011			Entery Sactery/kor	Testing suspended by Provider request.	E-col-ron-0157		Site 1 positive	Low, kno	UNDERGITY	131	PEDGEOR	Natale	-	Evens .	1326	Opener	14
#B1000122	NwF0.300022	1	02112011			Enters Bartensister		Quarks some	210/01/2426	and appendix	47		TN		Croile	-	Rouby .	34721	Deey Flat	
eff1000023	Pauli 100023	-	02182011	02223011	32222001	Enters Bacterislogy	No Diga toxin 1 or 2 OniA detected by PCR.	E cal non-0187	EP-P-NID 1.0071	ERMADE OD 10 Chi 2 positive	Joh sh	X0HNGON CL.	111	F800022	Pater	н	Pan	\$3400		
#R000024	huth200224	÷-		02222011		Driteria Das teriskapr	No Selmanela Shigela Escherichia cui D11			Sta 2 positive	and bei	SOLTANILA	-		Recent		Rife	12346	decard.	1
alR000125	NelR30025	1	02162911			Enteric Bactericlopy	Escherichia (di non-C117 issieted with Sh		000010246	E3NA28, 3190 Stx 1 positive	et.ta	IRLANCER M.	25		Start	-	Dup	131.25	Kodak	N
#R100126	New P2000126	\$	02192011			Enteric Eactivicion	No Selecturella Shigella Escherichia col D15		14041464	Developed by Dealer	CAP	CAP	75		Vent	-	los	#1225	- Pacope	5
dE1000027	NetRotocz7	÷	022220011			Enteric Bacteriology	No Escherichia col 0157 selated.	E. coli C 157947	Deep1 0047	E194424.0032 Stx 2 peaking	Joh Sch	XDHNEOD CT.	75	1000006	Wendel	10	Peterson	03227	. Wande	5
67.000120	North 2000220	£ -	02222911			Crite's Declarition	No Salmarella solated.	E colinor-0157	EN/0801.0602	EVWA25.0478 Sta Loostive	W. Inc		75		Dunekd		Thomash	20212	Roule	10
eE1000129	NetRX0129	÷	02222811			Enteric Sactendage	To Sucela oslated.	E cm (1157H7	EX-6010200	ED4A26. IC15 Stx 2 peaking	Por Anno	FORT SAVER			000	3	Kerry	62685		1
0/1000130	hereite 2000 200	\$	02222611			Enterix Barbeirigen	No Date true 1 or 2 Date detected to PCE.			Sty 1 metter	Lul No		751	100025	hes	-	Renete	6326 6		1
#T1000031	hull10000011	6	02122011			Enter's Bacheridage	teo Calmanuella Dispaña Escharactera cali OLL.		18901-0273	and a possible of the second s	For Jose	FORT ENDE	751		Nev	-	Hartin		Oanda	1
CR000012	NutR200232	÷-	03152921			Criteria Bectersakagy	Escherichie sal non-C137 issieted with Sh-				for Joo	PORT SMEE			5.0		Alder	3070 E		1
00000033	NotR 200333	-	01082011			Entery Bacterickopt	to Salmonella Shoella Escherichia coli OLL.		10001-0011		for kno	PORT SALE			Rita		tech		anatol	2
dR00014	NetRocolog	6				Enteric Eactwickopy	No Salmorela Shigela Escherichia rol O11		in the second se		forken	POET SAILE			Abert	1	04			5
el7:000025	NelD20025	5				Enteric Eactoridage	No Shige toxin 1 or 20%4 detected by PCR.		-	Six Loopbye	Lim.kna	UND REALTY			Betty		B.ch		Sluff City	5
72000100	100100000	6	01202011			Criteric Bacterickapy	No Seinerela Singli Eddenicia del O15		W1010514	and a present	fiction	PORT SMOT			Qw3		Charles	20712		5
#94000037	New 100017	6	01302011			breek bacteridogi	No Shoe toor 1 or 20% detected by PCK.		P001102		for Ann	PORTSAILE			Contra	-	Denteta	09655		100
F0.000138	he#8300038	\$	01302011			Entery Barterslate	to Salavada Sugala Escherintia rel 015		P STRACK		Nor keep		-	FID0017	Eduard	-	Manatan	5115 5		1
e#11000030	hull1300330	-	01302011			Entery Bacteridage	No Drigs town 1 or 2 DNA detected by POIL		-		Har Jone	FORTENEE.			Forence	-	Nan		Grandle	1
#71000040	1940R300240	6	01303011			Erdera Sacteriology	No Solourele Singele Eschenicies of Por-			dia tasatiw	Lan.	1011541LA			Gru .		Late		- Draw	2
ofR000041	NotR300041	5				Enteric Sacterickopy	the Shige base 1 or 20th detected by PCK.		-	Six Loostive	47	OCX CO.B.			ranet	1	PRUSE		aretoi	20
MR100042	NoR300342	6				Enteric Bactericlopy	No Selected Shade Extended of POL			EX LINET	Hor kno	POET SMEE			14a	-	Riste .			-
D-0001756	NelFL0000-CJ	E				Enteric Bacterideov	No Shiga toxin 1 or 20%A detected by PCR.		1	Stx 1 positive	Joh Joh	X0HNGON CZ.			Jacon		Green		Buff City	

g) **Upload**- The upload function imports the selected file into the CIFOR database. When the upload process is completed, a series of Edit Reports will be displayed.

IFOR2 - Vie	w Data Files							_ [0]
A File: C/(CP)	OF2 Datafiles (Testing)	ofile_No_Errors.txt				CIFOR2 Edit Report		Print
Date: 07/09/	2012					From Date: 01/01/2011 Thru 12/31/2011		
or Records U	pdated Records Race	Propert						
Fecord No.	Accession No.	Date Collected	Onte Received	Date Reported	Pasient DOB		Error Description	
	NoER360004	61280/011	01302011	31992011	103119865	(Inveld Date Reported		
	NoER390023	01202011	92632011	02002011	113:129	(Invalid Patient DOB		
	NCERORC35	01202011	01212011	01212011	01141942	/örgaliam Held is too king		
	McER300037	61202011	91232011	31212011	01141942	(Primary Enzyme Pattern is too long		
	NoER380030	81202011	01212011	01212011	07213980	(Organiem Field is too long		
	NoER380040	81202011	91212011	01212011	01292934	(Organam Field a too king		
	NdER300042	81202011	01212011	31212011	08311967	(Organism Field is too long		
	NdER300044	81202011	01212011	01212011	11171963	(Organism Field is too long		

- a) The **Error Records** report will show the records that have been rejected with errors and a brief description of the error.
- b) The Updated Reports report (Tab 2) allows a user to view records that have been added and/or changed in the CIFOR database. Users can upload both previously imported and/or new records into the CIFOR database. Pre-existing records are overwritten or updated accordingly (if new information is available since last upload).
- C) The Recap Report (Tab 3) provides a summary of the total number of records added, updated, rejected due to errors, and skipped. Those records that fall outside of the selected input date range are excluded from the import. Therefore, it is recommended that users carefully consider the input date range based on the files being imported

h) Any of the reports can be printed by clicking the Print button located in the upper right corner of the screen.

Her CriciFoR(pathled)TettrpoFile_Nt_Enters.bt	CIFOR Edit Report	Print
Balle: 08(15/2012	From Date: 10/33/2010 Thru: 11/31/2011	
Records Aphaded Records Rectp Report		
Import Rocap		
From Date: 19/90/2010 Three 11/21/2011		
Import File: Cr/CFOR/DetailNat/LeditputFile_No_Errors.bd		
Run Dote: 08/35/2012		
Total Records in the File: 0		
Records Rejected with Errors: 6		
Records Not Within The Date Range: 0		
Records Added to the Database: 0		
Records Changed in the Database: 35		

#### c. Running the Reports

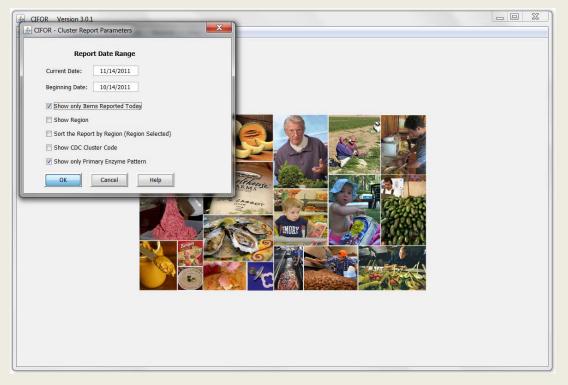
- i. The software has two main reports that should be used in tandem for optimal results: the Cluster Report and the Frequency Analysis.
  - 1) The Cluster Report provides a listing of all new/ updated patient results along with any exact matches to those results over a timeframe specified by the user.
  - 2) The Frequency Analysis report provides historical counts of all recent patient laboratory results (by organism, primary or secondary enzyme, other result or any combination thereof) within the past three months and the past five years.
- ii. The software also includes a Detail Query Report that can be used for ad-hoc queries of the entire database.

NOTE: The Cluster Report and Frequency Analysis should be run daily to closely monitor matches to new and/or updated patient results.

## d. The Cluster Report

- i. While on the main screen, click on Report on the menu bar top left. You will see a drop-down sub-menu listing the Cluster and Frequency Analysis Reports.
- ii. Select the Cluster Report.
- iii. Next, you will see a parameter window with Current and Beginning Date fields. The Current Date defaults to today's date and the Beginning Date defaults to 30 days prior to today's date. Note that the box is checked for "Show only Items Reported Today". To view new/updated results for today and any matches run the report as is.

The goal of the software is to more quickly detect potential foodborne disease clusters by providing a means of continuous monitoring of newly reported results and subsequent matches. It is recommended that users first run the cluster report with the default settings then adjust the parameters as desired.



- iv. To view matches to older results, <u>un</u>check the box "Show only Items Reported Today" and input the desired date range.
- v. Check the "Show Region" or "Sort the Report by Region" boxes if you use the Region Field in the CIFOR database and want it displayed on the report.
- vi. Check the "Show CDC Cluster Code" box if you use the CDC Cluster Code in the CIFOR database and you want it displayed on the report.
- vii. Check or uncheck the "Show only Primary Enzyme Pattern" box to show only the Primary Enzyme Pattern or to show both the Primary and Local Patterns on the report.
- viii. Once you have entered the parameters, click the OK button to see the report

ix. The Cluster Report will be displayed in a scrolling window for review. The window can scroll vertically and on a smaller monitor can scroll horizontally as well.

Current Date	11/14/2011						Cluster Report							
Accession No.	First Name	Last Name	Cty	State	County	Age	Organism	CDC Primary Enzyme	CDC Secondary Enzyme P.,	Other Result	Date Collected	Date Received	Coto Raported	
c17091953	Renee	Alder	Butf City	TN	Sullvan	54	Campylobactor jajuni				2011-36-28	2311-11-63	2011-11-14	New resul
C17001967	Abet	White	Worke	TN	NYEK.	66	Carreylobacter Jepuni				2011-10-31	2311-11-07	2018-11-04	new resul
015000181	Nely	Dodge	Novile	TN	Khok	56	Campylobacter (stjuni				2011-11-03	2911-11-63	2011-11-06	
C11000000	Jaion	Stedman	Ruttedge	TN	Khox .	0	Campylobacter jajuni				2011-16-19	2211-10-29	2011-11-04	reported today
C15000174	Ponerce	Sickson	Mcleanord	MC.	Out of State	0	Campylobacter Jejuni				2011-38-38	2211-10-18	2811-12-07	reported
c15000170	124	Bender .		TN	Sever	27	Campylobacter Jeluni				2011-36-17	2311-10-24	2011-10-27	
015990171	Conna	Johnson	Cubepper	VA.	Out of State	78	Campylobacter japuns				2011-36-60	2211-10-34	2011-58-38	1.1.1.
C17002008	5.4	Long	Bull COV	TN	Sulves	52	Saturo ela Erceitido	266431.0004	-		2011-11-04	2321-11-24	2011-11-14	todav
¢17001907	ónile	Red	Rodak	TN.	Sever	18	Salmenela Encertido	306431.0023			2011-33-04	2311-11-14	2011-01-04	
100200113	stan	Lavendar	Kronite	TN	Khok	72	Samonala Infantsi	JFN001.0011			2011-16-27	2911-11-14	2011-11-14	
C17052004	Osneld	Wight	Washie	TN	K-rest	3	Salmonela Javiena	396001.3331			2011-13-02	2011-11-54	2011-03-04	
C17032000	Renee	Green	Knowle	TN	Khok	8	Salmon ela Mosissippi				2011-11-01	2311-11-14	2011-11-14	
C17002009	Wandell	Evans	krowle	TN	Knox	1	Ssimonela Newport	13FX01.003E			2011-33-02	2311-11-34	2011-11-14	
C17001995	Matte	Dodge	Mcleansoi	MC.	Out of State	64	Salmenela Norwah	TOTX01.0003			2011-11-05	2311-11-24	2011-03-04	
C17001999	Peter	Stedman		TM	Sever	0	Salmonela Oranemburg	3,0001,0293			2011 11 04	2311 11 14	2011-11-14	
C17002002	vegt	Downs	K/ Crivila	TN	Khok	28	Sattenala Typhmurum	JP00001.1197			2011-33-05	2111-11-14	2011-11-14	
C17032007	Mary	Dua	Rifledge	TN	Knox.	0	Salminele Typhimatars	1P30001.1848			2011-36-26	2011-11-04	2011-11-14	
C17002005	(Ocb	Pan	Bratal	TN	Sullian	2	Salmonella Typhimutum	3P30001.0028			2011-10-30	2253-31-24	2015-11-14	
C17001006	instale.	Hatting	Sevenil	TN	Saver	59	Sattenels uganda				2011-33-02	2311-11-34	2011-01-04	
c17001945	Japon	Dup	Novle	TN	Kinx.	1	Satranela subspecies 14-5-	300001.0028			2011-10-21	2911-11-02		
int Options 2 Monder: Cl 2 Feater: D			orts 11 To: 11/14/2	1011	Report Page (	0)	Print Is	cet						

- x. All new results reported today are shaded to draw the user's eye quickly.
- xi. Results are matched based on 1) Organism 2) CDC/ Local Primary Enzyme Pattern 3) CDC/ Local Secondary Enzyme Pattern and 4) Other Result in that order.
- xii. Results can be sorted by any column to allow the user to hone in on a particular cluster or grouping of interest.
- xiii. The Cluster Report can be printed by clicking on the Print button on the bottom of the report window. Select Properties on the printer window to change the printing properties and margins.

Current Dates							Cluster Report							
Accession No.	First Norw	Lost Name	City	State	County	Age	Orgenism	CDC Primary Enzyme	CDC Secondary Enzyme F	Other Result	Date Collected	Date Received	Date Reported	4
AC1 P001953	Renee	Alder	SUT ON	TH	Sution	54	Campy/obacter Jejury				2311-10-28	2013-11-03	2011-11-14	į,
AC17001967	Abet	Vibbe	Nros/de	TN	Nnox	. 66	Campylobacter Jejuni				2311-10-31	2011-11 07	2011-11-14	
C15000181	Kely	Dodge	Noute	75	Nnox	56	Campyobacter Jejuri				2311-11-03	2011-11-03	2011-11-08	1
C11000008	lison	Stedran	<b>Rutiedge</b>	TN	NYOK		Campylobacter Jejuri				2311-10-19	2013-13-19	2011-13-04	
C15000174	Forence	lacison	Mcleania/E	800	Out of State	0	Campylobacter Jejuni				2211-10-18	2011-13-18	2011-11-02	
C15000176	169	denticy		734	Sever	27	Campylobacter Jojuni				2011-10-17	2011-10-24	2011 10 27	
C15000171	Donna	Johnson	Cubeccer	¥.A	Out of State	70	Carcy/cbacter jetuni				2311-10-10	2033-10-34	2011-10-18	
C17002008	Sue	Long	Bull City	716	Sullvan	52	Samorela Ertettida	36SR01.0004			2311-11-04	2011-11-14	2011-13-14	ł.
(17001997	Onde	Rad.	Rodak	28	Sever	18,	Samerala Enterteta	NGN01.0023		-	2311-11-04	2013-11-14	2011-11-14	
C17002001	Stari	Lavendar	Krowle	TN	Knox	7	2. Frint	Table Ball	X		2311-10-27	2033-11-14	2011-13-14	
C17002004	Danald	vhiphs	Norde	Th	NIXIN		Formation				2311-11-02	2011-11-14	2011-11-14	
VC1 F002000	Renee	Green	snowle	TH	Khok		Ganaral Page Getup An	pearance			2011-11-01	2013-01-14	2011-11-14	ĩ
C17002003	Wendell	Evana .	Krocile	78	Knax	1	Print Service				2011-11-02	2033-11-14	2011-11-14	
C17001995	Hattiri	Dodge	Meleansel	MC.	Out of State		Isomet Retther HL-22	XXW seres	<ul> <li>Preparties.</li> </ul>		2011 11-05	2031-11-14	2011-11-14	
C17001999	Peter	Scedrun		714	Sever	9	Status: Accepting jobs				2011-11-04	2013-11-14	2011-11-14	
C17002002	Vrol	Others.	szor/le	734	KNOK	18	Type:				2311-11-05	2031-01-14	2011-11-14	
LC17002007	Mary	Oup	FLEwdge	731	Knox	- 6	mfa-		1 ma 2 m 2 m 2 m 2 m 2 m 2		2311-10-26	2011-11-14	2011-11-14	
C17002005	Bob	Pan	Dretol	TN	Sulkan	1	sulo:		E Print To Filo		2311-10-30	2013-11-14	2011-11-14	ł
C17001996	Natalie	Hetley	Several	75	Sever	- 2					2311-11-02	2011-11-14	2011-11-14	
AC17001945	33600	0.p	arce/de	78	Knox		Fret Range	Capies			2311-303-21	2611-11-03	2011-11-14	
							9 Al		er of copies: 1 👔 alloce <b>Print</b> Cancel					
	_		_							~		_		
ine Options														
E Header: Ch	ster Report -	Today's Rep	orts											
States De	In Brance Long	. 10/14/20	11 Tec 11/14/2	011	Report Pape	(11)	Print	tood						

xiv. Should further analysis be desired, the user can export the report into excel. Click on the Excel button on the bottom of the report window. The spreadsheet will be created and then saved in the C:\CIFOR\Excel directory on your PC. The Excel spreadsheet data can be manipulated in any way without affecting the CIFOR database.

Pasi	Copy				nge & Center + 17	General S - % , 3		Institutional Format Cell styles Cells	∑ AutoSum * 27 A a Fill * 50rt & Find & 2 Clear * 5rt & Find & Filter * Select * Editing	
21	A2 B	· () fr	D	E	F	G	Н	1	li iste	K
1	Accession No.	First Name	Last Name	City	State	County	Age	Organism	CDC Primary Enzyme Pattern	CDC Secondary
-	AC17001953	Renee	Alder	Bluff City	TN	Sullivan	54	Campylobacter jejuni	COC Primary Enzyme Pattern	CDC secondary
	AC17001967	Albert	White	Knoxville	TN	Knox	66	Campylobacter jejoni		
	AC15000181	Kelly	Dodge	Knoxville	TN	Knox	56	Campylobacter jejuni		
5	AC11000008	Jason	Stedman	Rutledge	TN	Knox	0	Campylobacter jejuni		
6	AC15000174	Florence	Jackson	Mcleansvil	NC	Out of State	0	Campylobacter jejuni		
7	AC15000178	Ida	Bentley		TN	Sevier	27	Campylobacter jejuni		
в	AC15000171	Donna	Johnson	Culpepper	VA	Out of State	70	Campylobacter jejuni		
9	AC17002008	Sue	Long	Bluff City	TN	Sullivan	52	Salmonella Enteritidis	JEGX01.0004	
10	AC17001997	Orville	Red	Kodak	TN	Sevier	18	Salmonelia Enteritidis	JEGX01.0023	
11	AC17002001	Stan	Lavendar	Knoxville	TN	Knox	72	Salmonella Infantis	JFXX01.0011	
12	AC17002004	Donald	Wright	Knoxville	TN	Knox	3	Salmonella Javiana	JGGX01.0301	
13	AC17002000	Renee	Green	Knoxville	TN	Knox	8	Salmonella Mississippi		
14	AG17002003	Wendell	Evans	Knoxville	TN	Knox	1	Salmonella Newport	JJPX01.0030	
15	AC17001995	Martin	Dodge	Mcleansvil	NC	Out of State	64	Salmonella Norwich	TDTX01.0001	
6	AC17001999	Peter	Stedman		TN	Sevier	0	Salmonella Oranienburg	JUDCK01.0191	
17	AC17002002	Virgil	Downs	Knoxville	TN	Knox	10	Salmonella Typhimurium	JPXX01.1197	
18	AC17002007	Mary	Dup	Rutledge	TN	Knox	0	Salmonella Typhimurium	JPXX01.1048	
19	AC17002005	Bob	Pan	Bristol	TN	Sullivan	2	Salmonella Typhimurium	JPXX01.0038	
	AC17001996	Natalie	Hartley	Seviervill	TN	Sevier	59	Salmonella Uganda		
	AC17001945	Jason	Dup	Knoxville	TN	Knox	1	Salmonella subspecies I 4-5-12 b -	JKXX01.0028	
2										
4										
5										
6										
27										

## e. The Frequency Analysis Report

i. Under Report, select Frequency Analysis from the drop-down menu.



- ii. Choosing a date range- Similar to the cluster report, the default settings provide all results reported in the past 30-days starting with today's date. Please note that the beginning date has no bearing on the frequency parameters, rather it determines how many results will be included in the report.
  - 1) To view frequencies for today's results, run the report as is
  - 2) To view frequencies for results in a specified date range, uncheck the box and input desired date(s).
- iii. Once you have entered the parameters, click the OK button to see the report.



iv. The Frequency Analysis will be displayed in a scrolling window for review. The window can scroll vertically and on a smaller monitor can scroll horizontally as well.

Current Date: 12/31/2011 Beginning Date: 01/01/2011			Frequency Analysis All Reports									
Organism	CDC Primary Enzyme Pattern	CDC Secondary Enzyme Pattern	Other Result	December MTD	November	October	2011 YTD	2010	2009	2008	2007	
	2	1			\$	6	2	13	19			
Aaromonas hydrophila complex						2		2				
Cerrpylobecter col								4				
Carreylobacter Jejuni				1		6	2	32	1			
Campylobacter species						2		5				
E.col 0157:H7			Stx 1h2 postwe		t .	2		8				
E.col 0:57:H7			Stz 2 postwe	3	1			5	1	_		
E.col 0157:H7	Contractor Contractor		Stx negative					1				
E-col 0157:H7	EXH4101.0125	EXHA26.0579	Stx 2 postwe			1		3	1			
E-col 0157:H7	E00001.0134	(D0IA26.0742	Str 2 postwe			1		1				
E-col 0157:H7	EX04K01.0224	EXHA26.0526	Stx 2 postke					2	1			
E.col 0157:H7	EXH001.0238	EXHA26.0107	Stx 182 postwe					1				
E.col 0157:H7	EX4401.0352	EXHA26.3177	Sts 182 postive			2		2				
E-col-0157:H7	E00001.1711	EXHA26.2012	Stx 2 postwa					1				
E.col 0157:H7	EXH001.2250	E0HA26.1168	Stx 162 postive					1				
E.col 0157:H7	£00001.2294	EXXA26.0071	Stx 2 postwe					1				
E.col 0157:H7	EX64001.3866	EXHA26.3807	Stx 162 postive					1				
E.col 0157:H7	EXH401.4160	EXHA26.1608	Stx 1&2 postwe					2				
E.col 0:57:H7	E00001.4292	EXHA26.3884	Stz 2 positive					1				
E.col non-0157			Stx 1 postive	1 1	1		3	15	1			
E.col non-0157			Stx 182 postive					1				
E.col nen-0157	E00601.2117	(D01A26.3883	Str. negative					1				
E-col non-0157	DKW901.0107	CXWA26.0351	Str 1 postive					1				
E col non-0157	EXWX01.0569	100000000000000000000000000000000000000	Str 1 postwe					1				
Excherichia col				1	t	2		6				
Salmonella Agona	340X01.0609							1				
Salmonella Anatum					1			1				
Eximute texture	14/5V01 0/01	l,				-						

- **v.** The Frequency Analysis Report provides historical comparison of case results within threemonth and five-year windows.
- vi. Frequencies are presented for each result arranged in order by
  - 1) Organism only
  - 2) Organism and CDC/ Local Primary Enzyme Pattern
  - 3) Organism, CDC/Local Primary Enzyme Pattern and CDC/Local Secondary Enzyme Pattern
  - 4) Organism, CDC/Local Primary Enzyme Pattern , CDC/ Local Secondary Enzyme Pattern and Other Result
- vii. The frequency report should be run daily or as often as needed to closely monitor the frequency of recently reported results.

## f. The Detail Query Report

- i. While on the main page, click on Query on the menu bar top left.
- ii. Select Detail Query.



- iii. You will see a parameter window with Current and Beginning Date fields as well as fields for Organism, Primary Enzyme, Secondary Enzyme, or Other Result.
- iv. As with the Cluster and Frequency Analysis Reports, Current Date defaults to today's date. Input the selected date(s).
- V. Enter a full or partial description of the data you want to filter, using an asterisk (\*) as the wildcard character. For instance, if you want to see all E. coli O157 results within a specified timeframe, enter "\*O157" in the Organism field. Leaving the filter fields blank will show all patient results within the selected date range.



vi. The Detail Query report can be printed by clicking on the Print button on the bottom of the report window. Select Properties on the printer window to change the printing properties and margins.

Current Date: 1 leginning Date: 1			Detail Query				
Accession No.	Organism	Primary Enzyme Pattern	Secondary Enzyme Pattern	Other Result	Date Collected	Date Received	Date Reported
<11E000123	E.coli 0157:H7			Stx 182 positive	2011-07-16	2011-07-19	2011-07-24
K11E000062	E.col 0157:H7			Stx 182 positive	2011-05-04	2011-05-09	2011-05-14
K11E000061	E.coli 0157:H7			Stx 182 positive	2011-05-04	2011-05-06	2011-05-12
K11E000007	E.col 0157:H7			Stx 182 positive	2011-01-19	2011-01-24	2011-01-29
K11E000107	E.col 0157:H7			Stx 2 positive	2011-06-12	2011-06-24	2011-06-29
C11E000087	E.col 0157:47			Stx 2 positive	2011-06-06	2011-06-10	2011-06-15
11E000636	E.coli 0157:H7			Stx 2 positive	2011-06-04	2011-06-09	2011-05-14
11E000637	E.col 0157:H7			Stx 2 positive	2011-06-04	2011-06-09	2011-06-14
(11E000080	E.col 0157:H7			Stx 2 positive	2011-06-05	2011-06-08	2011-06-13
11E001799	E.col 0157:H7			Stx negative	2011-10-18	2011-10-18	2011-11-01
11E000970	E.col 0157:H7			Stx negative	2011-07-20	2011-07-21	2011-08-01
11E000030	E.coli 0157:H7			Stx negative	2011-03-09	2011-03-10	2011-03-25
11E000225	E.col 0157:H7			Stx negative	2011-03-09	2011-03-09	2011-03-15
11E000975	E.col 0157:H7	EXHX01.0008	EXHA26.1168	Stx 182 postive	2011-07-18	2011-07-22	2011-07-27
11E000976	E.coli 0157:H7	EXHX01.0008	E0HA26.1168	Stx 182 positive	2011-07-17	2011-07-22	2011-07-27
111000008	E.col 0157:H7	EX0001.0033	E04A26-2750	Stx 182 positive	2011-01-01	2011-01-05	2011-01-12
(11E001265	E.coli 0157:H7	EXHX01.0047	EXHA26.0071	Stx 2 positive	2011-08-16	2011-08-17	2011-08-22
116001015	E.coli 0157:H7	EX90X01.0074	EXHA26.0555	Stx 182 posttve	2011-07-17	2011-07-27	2011-08-01
11E001928	E-coli 0157:H7	EXHX01.0125	EXHA26.0570	Stx 2 positive	2011-10-23	2011-11-01	2011-11-06
11E001672	E.col 0157:H7	EXHX01.0125	EXHA26.0570	Stx 2 positive	2011-09-29	2011-10-03	2011-10-08
11E001659	E.coli 0157:H7	ED0(X01.0125	EDHA26.0570	Stx 2 positive	2011-09-14	2011-09-30	2011-10-05
411E001241	E.col 0157:H7	EXHX01.0125	EXHA26.0570	Stx 2 positive	2011-08-12	2011-08-16	2011-08-21
11E001108	E.col 0157:H7	E00001.0125	E04A26.0570	Stx 2 positive	2011-07-27	2011-08-04	2011-08-09
411E000996	E.col 0157:H7	EXHX01.0125	E0HA26.0570	Stx 2 positive	2011-07-21	2011-07-25	2011-07-30
•	<u>(</u>						
vint Options	Query						

vii. Should further analysis be desired, the user can export the report into Excel. Click on the Excel button on the bottom of the report window. The spreadsheet will be created and then saved in the C:\CIFOR\Excel directory on your PC. The Excel spreadsheet data can be manipulated in any way without affecting the CIFOR database.

## g. Geospatial Mapping

- i. There are a number of options available to produce geospatial maps to help visualize the location and size of clusters. A good resource outlining several options is the Tennessee Geocoding Cookbook which can be found on the CIFOR Clearinghouse site at <u>www.cifor.us</u>.
- ii. A simple mapping option described below is available to enable creation of Bing maps to provide visual representation of selected results. An Excel addin from MapCite (<u>www.mapcite.com</u>) can be purchased (a 30-day free trial license is also available or an annual license is available for \$99.00) and installed in Excel. Using MapCite, any Excel worksheet with the necessary geographic locators (Street, City, State, and ZIP Code) can produce a Bing map. The following steps describe how to create an Excel worksheet and then use MapCite to produce a map of the desired result records.
- iii. From the CIFOR main screen, select Map Results from the Menu bar and then click on the Mapping Query option.



iv. A Parameter screen will be displayed to allow the User to enter the criteria to select the results records to be displayed on a map. In the example below we have entered a date range to get only the result records within that date range and also entered wildcard characters "\*" around "Campy" in the Organism field. This will produce a report with all results within the date range and with the word "Campy" anywhere in the Organism name.



V. This will produce a Mapping Query report, shown below, which lists all of the Result Records that meet the selection criteria entered into the Parameter Screen.

<ul> <li>Pate Reported</li> <li>2011-06-12</li> <li>2011-06-12</li> <li>2011-03-25</li> <li>2011-03-25</li> <li>2011-12-09</li> </ul>
2011-06-12 2011-03-25 2011-03-25
2011-43-25 2011-43-25
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2011-12-09
2011-12-09
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2011-11-02
2011-18-37
2011-10-18
2011-09-22
2011-09-13
2011-06-30
2011-06-30
2011-08-03
2011-07-13
2011-06-28
2011-06-32
2011-06-22
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vi. From the Mapping Query report, the user can click on the Excel Button on the bottom of the screen. This will produce an Excel Worksheet with the same column headings and data show on the Mapping Query Report.

	235 - E X X		1929 2011-11-14-12-15-35 (Kompel	bity Model - Microsoft Last non	-COTTOTIC LAN				
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Opboard	First Plan	Alignment	5 Nanber 0	Style		Cally	Loting		
A2	<ul> <li>AC15000132</li> </ul>								
A	8	C	D	E	F	6	H	1	
Accession No.	Organism	COC Primary Enzyme Pattern	CDC Secondary Enzyme Pattern Of	her Result	Street Address	City	County	State	
AC15000132 Campylobacter coll					34221 Fairview School Rd	Printy Flat	Sullivan	TN	
AC15000138	Campylobacter coli				53690 Silverbrook Drive	Mcieansvil	Out of State	NC	
AC15000025	Campylobacter coll				3467 Baker St	Bristol	Knoi	TN	
AC15000024	Campylobacter coll				3670 Emmett Rd.	Bristol	Solivan	TN	
AC17002060	Campylobacter jejuni				1990 Michael Drive	Johnson Ci	Washington	TN	
AC17002121	Campylobacter jejuvi				1326 Walnut Larve	Culpepper	Out of State	VA.	
AC17002062	Campylobacter jejuni				5335 Siour Late	Knowlife	Knos	TN	
AC17002097	Campylobacter jejuni				83227 Aaron Lane	Knonlife	Knos	TN	
AC17001953	Campylobacter jejuni				5566 Silver Grove Rd	Bluff City	Sullivan	TN	
AC17001967	Campykibacter jejuni				202123 Washington Ave.	Knonrille	Khor	TN	
AC15000181	Campylobacter jejuni				202123 Washington Ave.	Knonille	Knox	TN	
AC11000008	Campylobacter jejuni				2468 New Coninth Rid.	Rutedge	Knox	TN	
AC15000174	Campylobacker jeguns				53690 Silverbrook Drive	Atcleansvil	Out of State	NC	
AC15000178	Campylobacter jejuni				83225 Aaron Lane		Sevier	TN	
AC15000171	Campylobacter jesurs				1326 Watwit Lane	Culpepper	Out of State	VA	
AC15000163	Campylobacter jejuni				1999 Michael Drive	Johnson Ci	Washington	TN	
AC15000159	Campylobacter jejuni				3467 Baker St	Bristol	Knoi	TN	
AC15000153	Campylobacter jejuni				2010 Beachwood Drive	knowle	KNOI	TN	
AC15000148	Campylobacter jejuni				6965 Sam Tilley Rd.	Khowille	KNOT	TN	
AC15000118	Campylobacter jejuni				5335 Sioux Lane	Knonrille	Knoi	TN	
AC15000114	Campylobacter jejuni				202123 Washington Ave.	Knowlife	Knot	TN	
AC15000103	Campylobacter jejuni				53690 Silverbrook Drive	Mcleanovi	Out of State	NC	
AC15000092	Campylobacter jejuni				1326 Viahut Lane	Culpepper	Out of State	VA	
AC15000091	Campylobacter jejuvi				5421 Foster Rd	Lenoir Cit	Loudon	TN	
AC15000079	Campylobacter jejuni				5335 Siour Late	Knowlife	Khoi	TN	
AC15000072	Campylobacter jejuni				12345 Netiols St	Severvil	Sevier	TN	
AC15000053	Campylobacter jejuni				2468 New Coryth Rd	Rutedge	Knoi	TN	
AC15000045	Campylobacter jejuni				3467 Baker St	Bristol	Khor	TN	
AC15000040	Campylobacter jejuni				5335 Sioux Lane	Knowlife	Knox	TN	
ACHEROPAN	Pameral Andrear ball store				10.10 Reached Pales	Attorneting	Water	734	

- vii. With the MapCite addin for Excel the User can click on the MapCite tab located in the Excel Menu Bar. This will display a new Menu Ribbon showing the options available in MapCite.
- viii. The next step in creating a Bing Map is to first Geocode the data in the worksheet. The User can do this by highlighting all of the columns and rows (including the header row) that should be shown a map. After highlighting the data, click the "Geocode Data" button in the MapCite Menu Ribbon. This will display a parameter screen where dropdown boxes are available to indicate which field in the worksheet represents the Street Address, Locality (Town/City), Administrative Region (State/County), and the PostCode. These fields are show on the screen below. Once the fields have been matched in the dropdown boxes, click the "Geocode" button on the parameter screen. This will perform the GeoCode step and add columns to the right side of the Excel Worksheet for Latitude and Longitude.

ter location to find A Find SP Need Location	Con John Barris	Add Import Carls Official Style	Atamage Geo bata D Map Data	View De Code sta Teatring Teatring		The Outline	10		tare Options		ert Professional Version						- 1
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Accession No.	Organia		000	Primary Enzym	a Pattern	CDC Second	lary Enzyme Patte	ern Other Bes			Street Address			City	County	State	-
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AC15000138	Camp				-		-	_		_		- (0)		Accessor	Out of State	NC	
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AC15000024	Campe	Salacted Date					Culture Eng	Ash (United King	(done)		🖂 Use Unstruc	turied Method O	4	Bristol	Sullvan	TN	
AC17002080	Canp	Selected Cella		000	000	_		sent transie		-			1	Johnson Ci	Washington	TN	
AC17002121	Camp	Accession	and a	CDC Primery	CDC Secondery	Other	Street	1997	125083	12000	112002521	15036	12	Cupepper	Out of State	VA	
AC17002062	Camp	No.	Organism	Enzyme	Enzyme	Result	Address	City	County	State	Zip Code	Zqr4	11	Knonille	KINOK.	TN	
AC17002097	Camp	-		Patiern	Patiern							-	-81	Knonite	Kinos	TN	
AC17001953	Canpe		ampylobec.				34221 Feini		Suliven	TN	37606	-	-81	But City	Sutivan	TN	
AC17001967	Camp	AC15000138 C					53690 Silver	Moleensvil	Out of States	NC.	27301	_		Knowlle	Knox	TN	
AC15000181	Canpe	actionnel.c	Seares Bolkpon				0 3.467 B-1-1 E	A. Burnhall	Warden .	79.	11010			Knonite	Knox.	TN	
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AC15000174	Canpe													Accessi	Out of State	NC	
5 AC15600178	Campe	Street Address	Street Address											Sevier	TN		
AC15000171	Canpe	Locality (Town/City)		City										Cupepper	Out of State	VA	
7 AC15000163	Campe			State										Johnson Ci	Washington	TN	
AC15000159	Canpe	Administrative Region (Sta	ete(County)	2004								Bristol	Knox	TN			
AC15000153	Camp	Postcode		1000	2									Knowlife	KNOK	TN	
AC15000148	Campe	Country		Access Organis								1		Khowle	Kitox	TN	
AC15000118	Campe			CDC Pr	imary Enzyme Pt									Knonitte	KINOK	TN	
2 AC15000114	Campe			CDC Se Other R	condary Enzymy	Pattern						Geox	006	Knowlife	KINIK	TN	
AC15000103	Camp			SteetA								-		Aceansvil	Out of State	NC	
4 AC15000092	Campe			City County										Cupepper	Out of State	VA	
AC15000091	Campe			State							0			Lenoir Cit	Loudon	TN.	
AC15000079	Carry	CKIN NOV	_	Zg+4				_	_	_	5325 TROUT CAM	_	_	Knowle	RINOK	TN	
AC15000072	Campys	ibacter jejuni		Data Ra	eponed						12345 Nichols SI	£		Severvill	Sever	TN	
AC15000053	Campyle	dacter jejuni		0.00			100				2468 New Control	n Hd.		Rutedge	KNOK	TN	
AC15000045	Campyle	xbacter jejuna									3467 Baker St			Bristol.	Knox	TN	
AC15000040		ibacter jejuni									5335 Sloux Lane			Knowlife	Knox	TN	
· · · Detailory	Canada	Sheet 5			_					10.	Mith Reachastry	4.0 mm		Annualle	KING.	TH	-

ix. Once the Geocode step is completed a popup window will be displayed to indicate completion of the Geocoding step. Click on the "OK" button.

der location to find	er Fage L eres, Nicht tap Fane Mag		Data Review ort Manage Ge File Data D y Mac Data		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Prof.		San San Option		Cert Productional Vitration					
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AC17001967	Carps	AC15000138			_	-	53690 Silver	McSeerovil	Out of State	NC YM	27301	-	. Anonite	Knot	TN	
AC15000181	Campe	1	Page Address				THE BALLET	. Brokel	Ye-		1,010		Knowlet	Knox	TN	
AC11000008	Campi	17 First row contains col	umn headings										Rutedge	Knox	TN	
AC15000174	Campy								1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1			Mcleanty	e Out of State	HC .	
AC15000178	Canpe	Street Address		Steel	409458			Geocoding completed						Sever	TN	
AC15000171	Carty	Locality (Town/City)		Cay									Cupeppe	r Out of State	VA	
AC15000163	Carp	Administrative Region (1		State									Johnson	Ci. Washington	TN	
AC15000159	Camp	Administrative region (	see (courty)	1000									Bristol	Knox	TN	
AC15000153	Campy	Postcole		Zp Co	le .			1	OK				Knonille	Knox	TN	
AC15000148	Camps	Country							UR .				Knowle	Khol	TN	
AC15000118	Campy							_	_	1		Gencie	Knonille	Khoi	TN	
AC15000114	Camp											CHOICE STORE	* Xnowile	Knoe	TN	
AC15000103	Carpe												Mclearov	t Out of State	NC	
AC15000092	Canpe	_											Cupipp	r Out of State	VA	
AC15000001	Campe	-	_			_		_			44/44		Lenor Cr	Loudon	TN	
AC15000079	Campyle	sacter jøjun	_							_	5335 500X LBM		Knowlle	Khol	TN	
AC15000072	Campylot	sacter jejuni									12345 Notols S	C.	Sevienti	Sever	TN	
AC15000053	Campylot	sacter jejuni									2468 New Coriel	n Ad	Rutedge	Knoi	TN	
AC15000045	Campylob	sacter jejure									3467 Baker St		bristol	Khol	TN	
AC15000040	Campylot	sacter jejuni									5335 Sioux Late		Knowlife	Knol	TN	
APAE/WWW.es	Panetdak	Sheet 3									1010 Reathands	(Dubie	kintenille	Kinos .	TR	-

X. The next step is to again select the data for the map by highlighting all of the columns and rows (including the header row) to be shown a map. Then click the "Add Data" button in the MapCite menu ribbon. This will display another parameter window. Enter the name for the map in the General Name field, and then use the dropdown boxes to select the Latitude and Longitude fields from the choices in the dropdown boxes. Leave the next two fields as they are displayed and then use the last dropdown box called "Label Field" to select a field to be used for labels on the map. The last step is to select a Pin choice for the map. Once these steps have been completed, click the "Finish" button.

A1 AC15000 AC15000 AC15000 AC15000 AC15000 AC17002 AC17002 AC17002 AC17002 AC17002 AC17002 AC15000 AC15000 AC15000 AC15000 AC15000	A alien No. 00132 00138 00025 00024 02040 02121 02062 02097 01953 01967		acter coli acter coli acter coli	ssion No. CC Primary End wiew (Top 100 re Organism		CDC Seconda	D vy Enzyme Patter	E n Other Resu		rview School R	G Crty Rd Privey Flut	County	Stat TN	J Zip Code 37686	K Zip+4	L Date Reported 2011-06-12	M Lattude 35.88486	N Longitude -118.64
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AC170021 AC170021 AC170011 AC170011 AC15000 AC15000 AC15000 AC15000 AC15000	02062 02097 01953 01967	3 3 3		Organism										_	_	- 11-12-09	35.5863	-92.30
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			Geocode					gemakel		e eo	o that it can be visi	uload and analys	d on the map			11-09-15	36.54371	
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AC15000	00092	Car	Numeric Field	No Numeric Field	d				#1.(A)							11-06-22	35.5863	-92.26
AC15000	00091	Car						Cancel	Finish							11-06-22	35.78748	-84.29
AC15000		Car	LabelField	Accession No.												111-06-13	36 01078	-83.848
AC15000	00072	Car														11-06-02	35.87103	-83.564
AC15000	00053	Car														11-04-28	36.20365	-83.615
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AC15000	00040		acter jejuni						5335 Sicu	it Lane	Knowlie	Knox	TN	37954		2011-04-05	36 0 1078	-83.848

xi. A Map of the selected data from the worksheet is now displayed on the right side of the Excel worksheet. The user can enlarge this window and also zoom in like you would on any Bing map. The initial default is to show Pin Clustering On, this button should be clicked off to show the individual pins. The map can be moved on the screen or zoomed to display

the map as desired. The map can also be copied to the clipboard and pasted into a Word document or any other document desired for distribution or presentation.



xii. One final option available to display the map is to click on the HeatMap button to display the map with colored highlight areas instead of the pins shown previously.



## 5. Obtaining the Software Source Code

- **a.** The CIFOR Lab-Epi Integrated Reporting Software is open-source software. It is freely available to any person who wishes to study, change and distribute the software to anyone and for any purpose.
- **b.** The source code is located on GitHub at <u>www.github.com</u> under the search term "gjones09/CIFOR".

## 6. Reporting Errors and/or Suggesting Future Enhancements

- **a.** At this time errors, suggested enhancements and other issues can be reported on GitHub at <u>www.github.com</u>.
  - i. Create a free account, log in, and search for "gjones09/CIFOR".
    - 1) On the CIFOR page, click on the information symbol ① on the right-hand tab.
    - 2) To report an issue (including an error with the software, suggested enhancement, request for assistance, etc.), click on the green "New Issue" button in the upper right-hand corner of the page.
  - b. Although one does not exist at this time, a user community is being considered where users could post questions and discuss aspects of the database, e.g. uses, additional analyses, etc. The community would be set up in a public forum such as phConnect. Please stay tuned!
  - C. If you have any questions regarding the software please contact Kirsten Larson (APHL) at <u>Kirsten.larson@aphl.org</u>. If you have any technical questions regarding the software please contact Gary Jones at <u>gary.jones09@gmail.com</u>.

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