

## PRE-CLASS PREPARATION FOR LECTURE 6 OF SISIMD MODULE 5

To facilitate your and your classmates' learning experience, please complete the following tasks prior to arriving for Lecture 6 of SISIMD Module 5.

1. Please visit the following website <http://www.cidid.org/transtat/?rq=transtat>.
2. If you are planning to install a precompiled version of TranStat 5, the software that we will be demonstrating during this lecture, on your Microsoft Windows or Mac OS X laptop, please skip to #3.  
If you would like to compile your own version of TranStat from the source code, you are using a Linux-based operating system, or you would like to conduct your analyses remotely on a Unix-based machine/server, please follow the directions listed below in Section A.
3. Installing TranStat 5 using the precompile binaries: Download the appropriate binary executable file from <http://www.cidid.org/transtat/?rq=transtat>. Microsoft Windows and Mac OS X versions of the latest version of TranStat are provided.
4. Click on the 2017 Case Study hyperlink to download the zipped archive of files required for the Case Study that we will be covering during Lecture 6.
5. Uncompress the contents of this zipped archive to a folder of your choice.
6. We will spend some time during Lecture 6 orientating the class to structure of the contents of this zipped archive.

### Section A. Compiling the TranStat 5 executable

You will need to download the latest version of the TranStat source code from the Center for Inference and Dynamics of Infectious Diseases (<http://www.cidid.org/transtat/?rq=transtat>). Uncompress/Unzip the contents of the source file archive into a directory of choice on your machine, which we will hereafter refer to as the *TranStat source folder*.

#### A.1 Compiling in Microsoft Window

**A.1.1 Required Software:** MINGW32 (or equivalent Linux/Unix emulators for MS Windows) with *gcc* and associated libraries.

#### A.1.2 Creating the necessary folder structure and setup files:

- a. Open the MINGW32 command prompt.
- b. Navigate to the TranStat source folder using the command prompt.
- c. Type "runc main.c main.exe" into the MINGW32 command prompt. Ignore the warning messages that appear in the command window. These message should pertain to the redefinition by TranStat of the value for the INFINITY.

Note: If the computer that you are using to compile this TranStat source code contains a Pentium 3 or earlier generation processor, you may be required to perform the following step before the command above will work.

Use Windows Explorer to navigate to the *runc* file in the *bin* folder, and open it with your favorite text editor.

Alter the contents of the *runc* file in the following manner:

- The contents of this file should look similar to the following:

```
gcc -O3 -march=pentium4 -g -lm $LINK_CNL $CFLAGS $1 -o $2
```

- Replace the portion shown in bold italics with the type of processor that your machine contains. Consult (<https://gcc.gnu.org/onlinedocs/gcc/x86-Options.html#x86-Options>) for more information.

c. The TranStat executable should compile as main.exe, which you can copy to any folder where you are storing analysis input files. If the main.exe file is created or is replaced (*i.e.*, if this is not your first time compiling the executable), ignore the warning messages delivered by Cygwin.

## A.2. Compiling in Linux and Unix

Since MINGW32 is a Microsoft Windows emulator for Linux/Unix, the instructions given in Section A.3.1 can be followed to complete compilation of the TranStat main.exe in Linux or Unix.

## A.3. Compiling in Mac OS X

NOTE: The Windows and Linux versions of TranStat has been extensively used and tested. Though the Mac OS X version is simply a re-compilation of the raw C-code using the Mac OS X GCC compiler, we are currently unable to guarantee that all features will work as well or efficiently as they do in the Windows or Linux versions. Therefore, The Mac OS X version is definitely a beta version, and we welcome any negative or positive feedback that the user community may wish to provide (email: [jons@fhcrc.org](mailto:jons@fhcrc.org)).

### A.3.1. Required software

To generate a native version of TranStat for Mac OS X, you must install a GCC compiler. The XCode application includes a viable GCC compiler. The following instructions will assume that XCode has already been installed.

### A.3.2. Compiling TranStat files for Mac OS X

1. Download and uncompress the latest version of the TranStat source code to you selected TranStat source folder.
2. Open a Terminal Window (Go/Applications/Utilities/Terminal)
3. Use the command line in the terminal window to navigate to the uncompressed archive folder. (HINT: 'cd ..' will allow you to navigate back toward the root directory on your hard drive, and 'cd *foldername*' will allow you to navigate to a subdirectory, *i.e.*, away from the root directory.)
4. Type the following command 'gcc main.c'.
5. The GCC compiler should generate a new file named 'a.out' in the same folder. This is the new TranStat executable for Mac OS X. You should be able to ignore any warning messages generated by the GCC compiler. These message pertain to the redefinition of the meaning of INFINITY for the purposes of running this program.
6. You may wish to rename 'a.out' to 'main.out'.
7. To use this new TranStat executable, you must copy it to the same directory on your hard drive as any data input files that you are planning to analyze.

Note: If you Mac OSX version is not the most recent version available, then you may wish to insert the "-mmacosx-version-min=*version\_number*" flag after the gcc command. For example, if your machine is running version 10.5, then you could use the command 'gcc -mmacosx-version-min=10.5 main.c'.