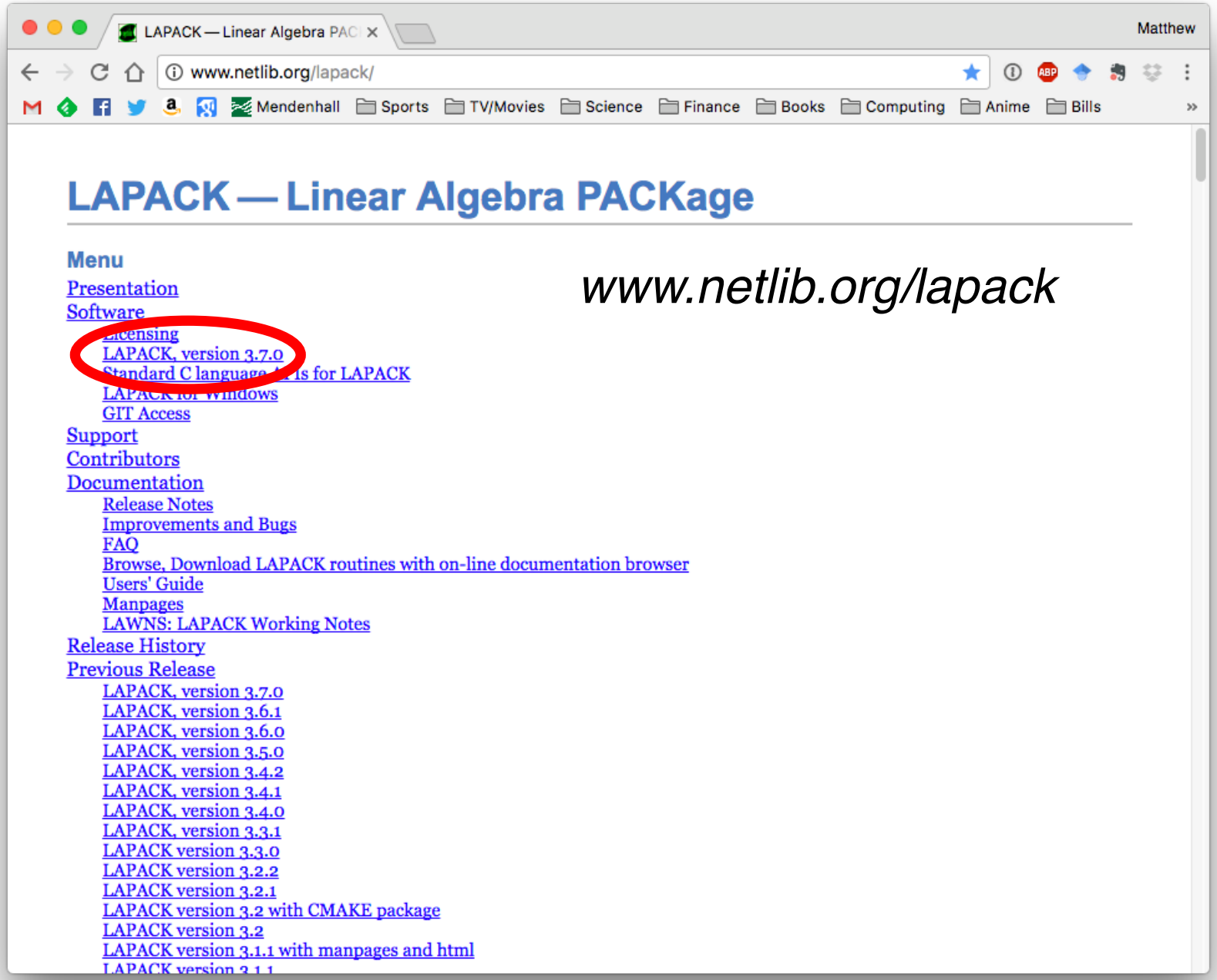
Installing LAPACK

Matt Herman

LAPACK

- Linear Algebra Package
- Contains lots of optimized matrix algebra subroutines.
- Useful for small-ish matrix computations, not for bigger problems.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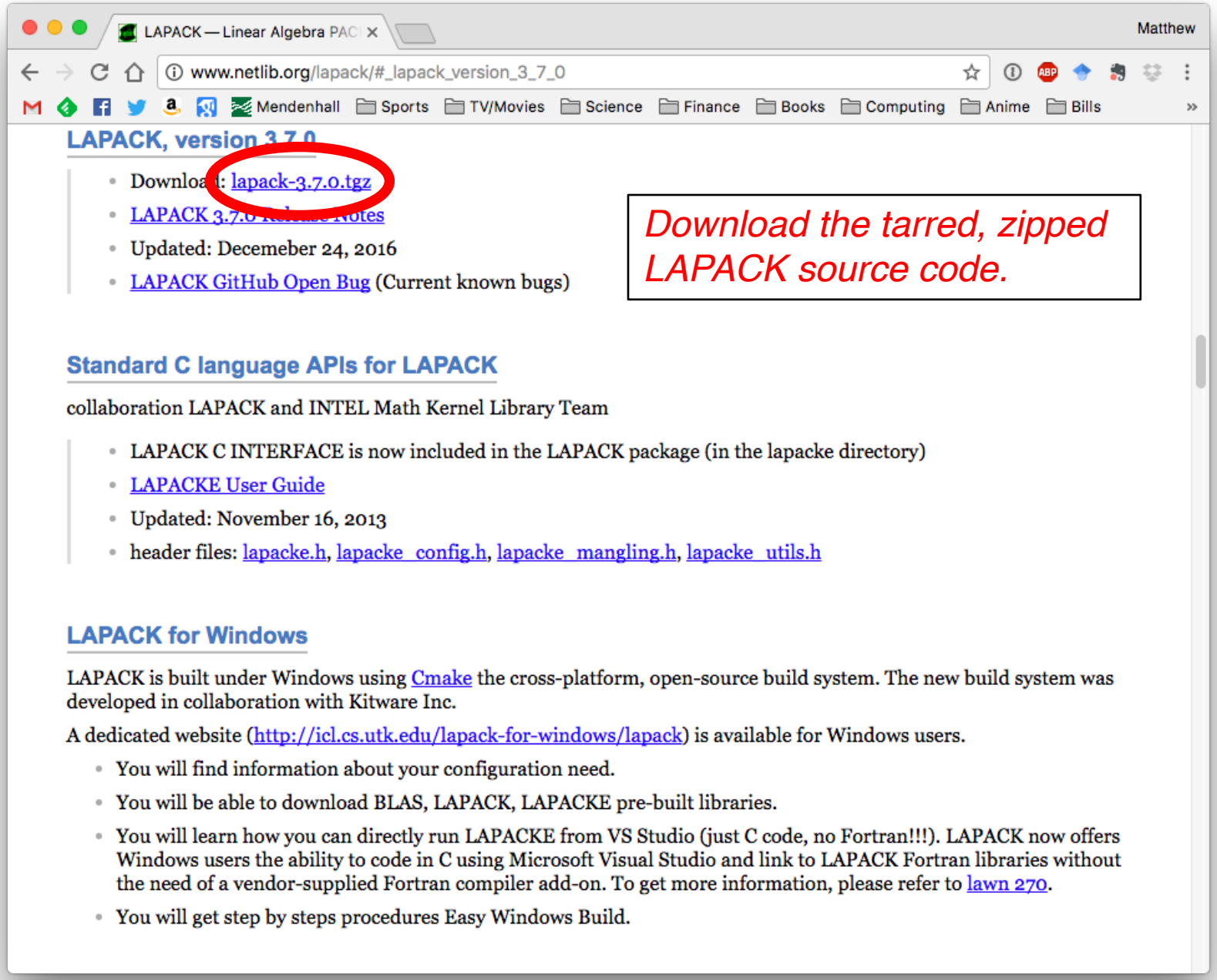
www.netlib.org/lapack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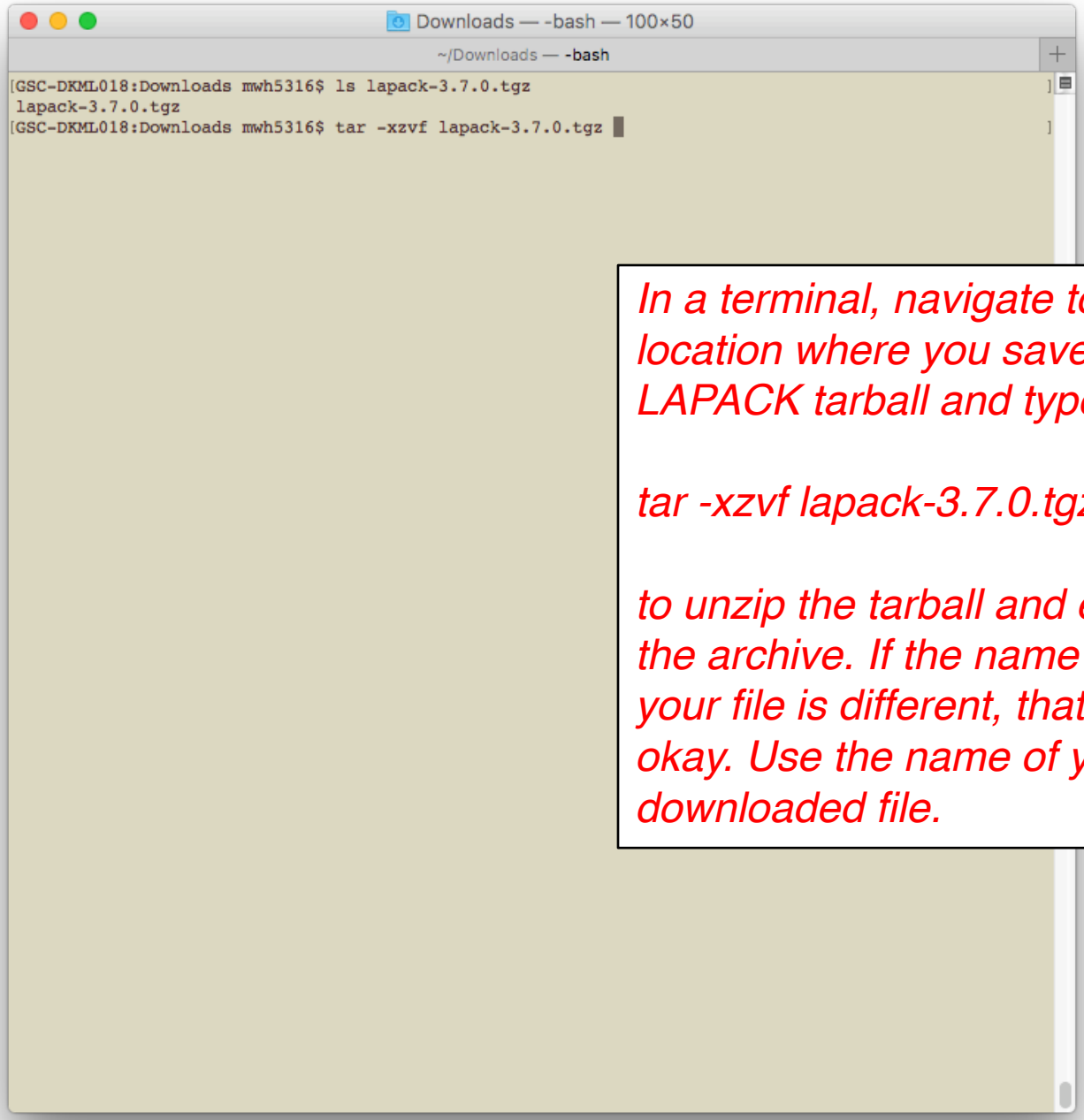
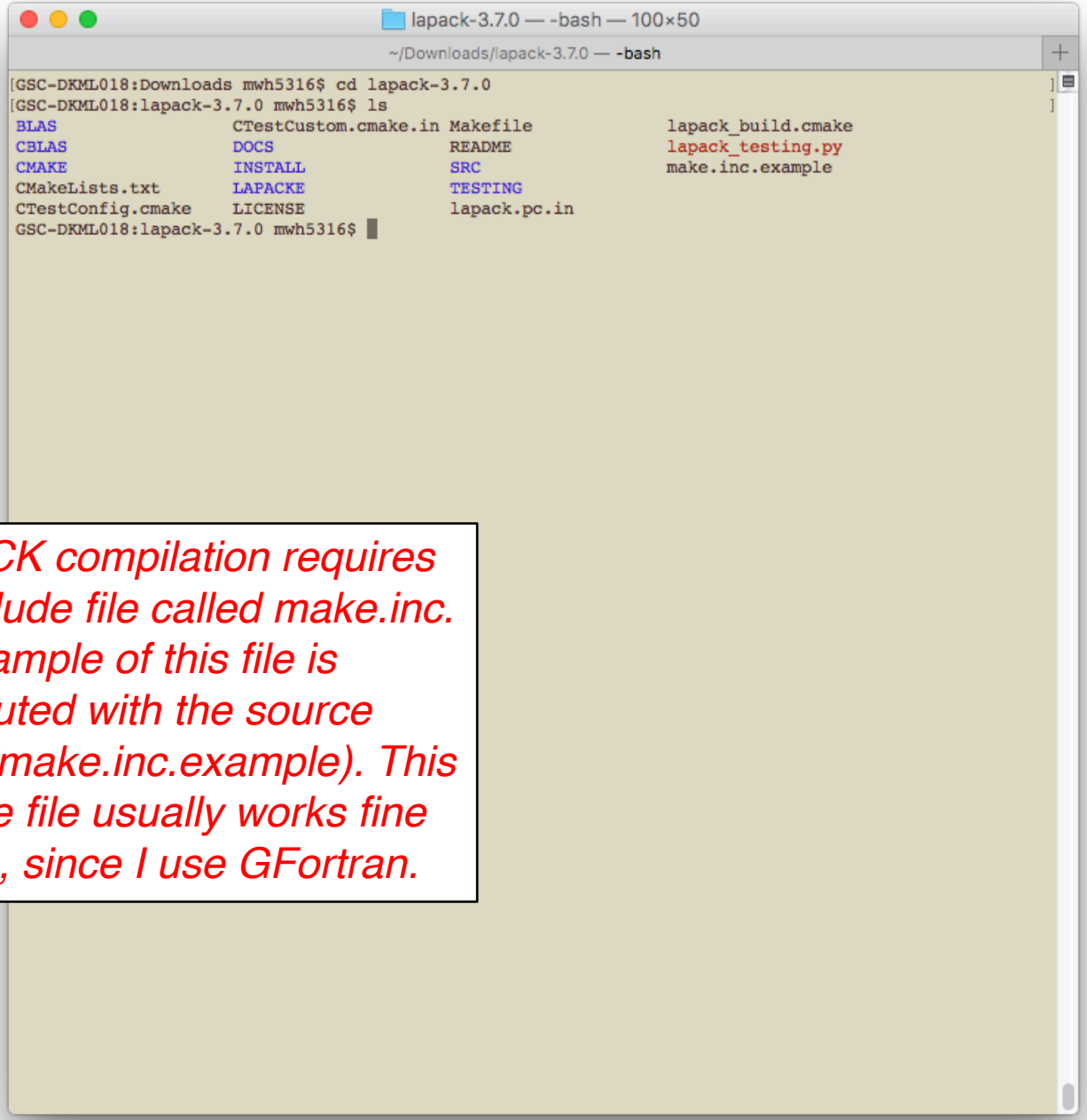
LAPACK, version 3.7.0
Download: lapack-3.7.0.tgz
LAPACK 3.7.0 Release Notes
Updated: Decemeber 24, 2016
LAPACK GitHub Open Bug (Current known bugs)
Download the tarred, zipped LAPACK source code.
Standard C language APIs for LAPACK
collaboration LAPACK and INTEL Math Kernel Library Team
LAPACK C INTERFACE is now included in the LAPACK package (in the lapacke directory)
LAPACKE User Guide
Updated: November 16, 2013
header files: lapacke.h, lapacke_config.h, lapacke_mangling.h, lapacke_utils.h
LAPACK for Windows
LAPACK is built under Windows using Cmake the cross-platform, open-source build system. The new build system was developed in collaboration with Kitware Inc.
A dedicated website (http://icl.cs.utk.edu/lapack-for-windows/lapack) is available for Windows users.
You will find information about your configuration need.
You will be able to download BLAS, LAPACK, LAPACKE pre-built libraries.
You will learn how you can directly run LAPACKE from VS Studio (just C code, no Fortran!!!). LAPACK now offers Windows users the ability to code in C using Microsoft Visual Studio and link to LAPACK Fortran libraries without the need of a vendor-supplied Fortran compiler add-on. To get more information, please refer to lawn 270.
You will get step by steps procedures Easy Windows Build.



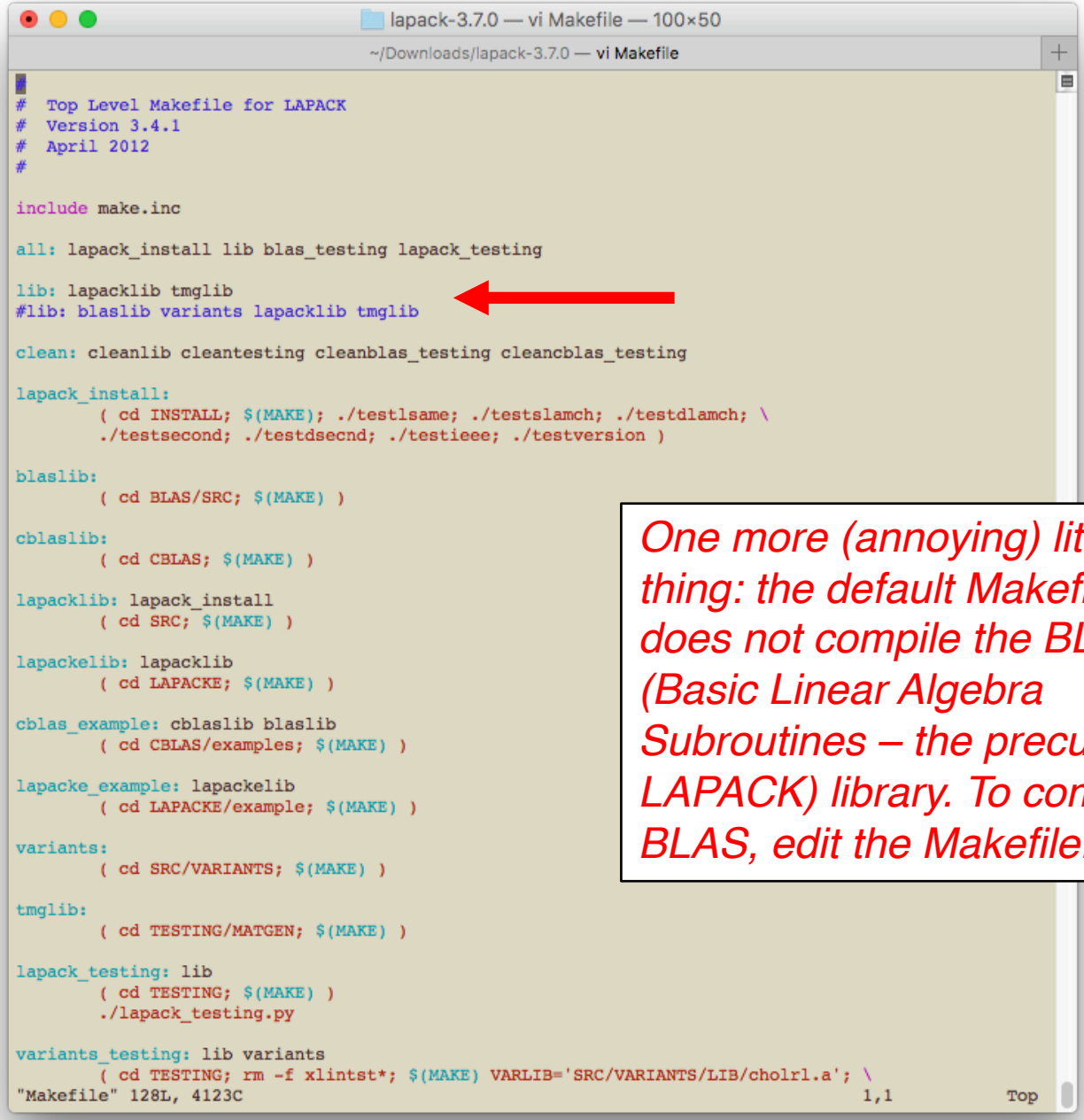
In a terminal, navigate to the location where you saved the LAPACK tarball and type:

tar -xzvf lapack-3.7.0.tgz

to unzip the tarball and extract the archive. If the name of your file is different, that is okay. Use the name of your downloaded file.



LAPACK compilation requires an include file called make.inc. An example of this file is distributed with the source code (make.inc.example). This include file usually works fine for me, since I use GFortran.

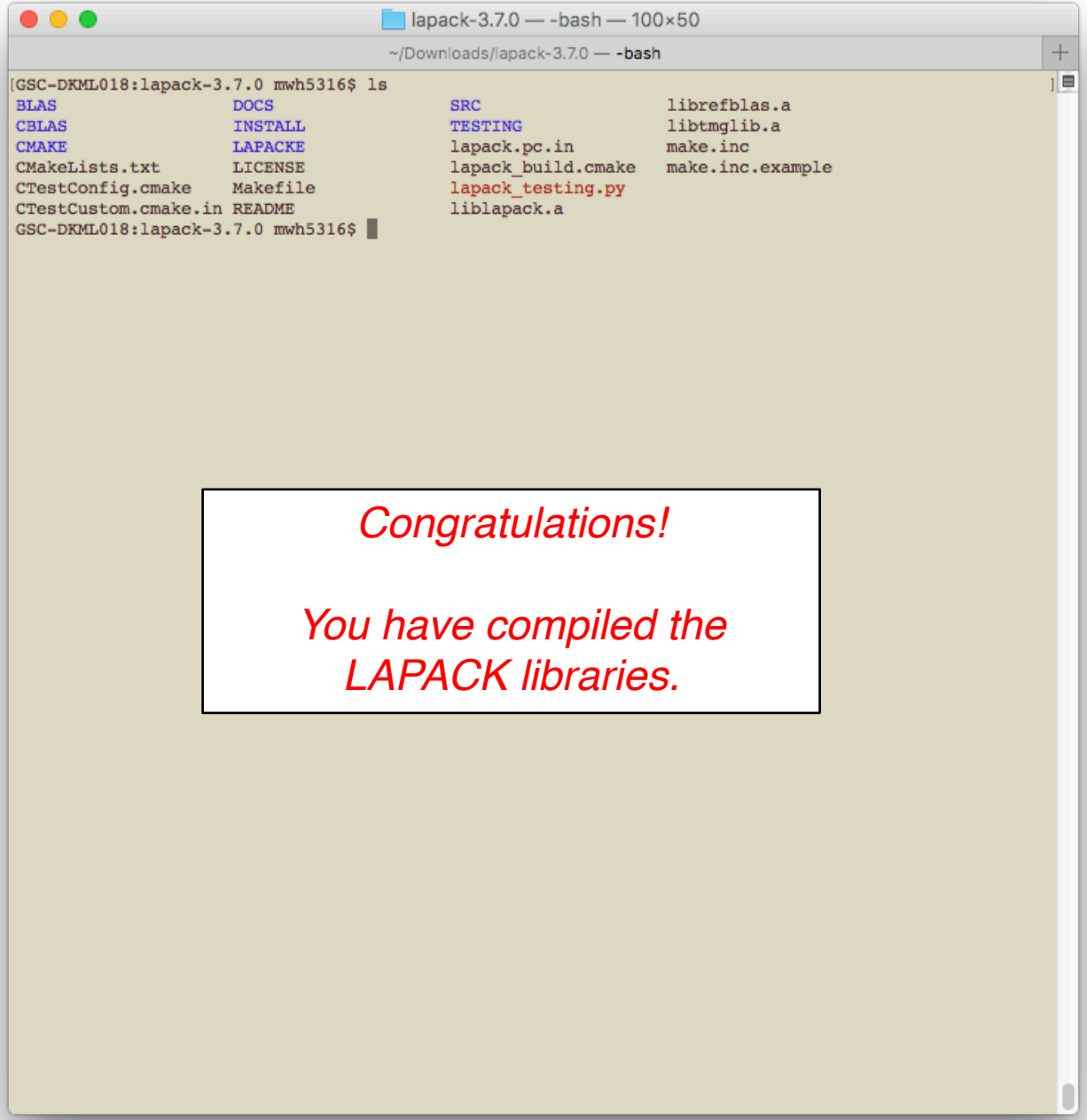


One more (annoying) little thing: the default Makefile does not compile the BLAS (Basic Linear Algebra Subroutines – the precursor to LAPACK) library. To compile BLAS, edit the Makefile.

Move the "#" to be in front of the line that reads:

lib: lapacklib tmglib

Type “make,” hit the return key, and wait….


lapack-3.7.0 — -bash — 100×50
~/Downloads/lapack-3.7.0 — -bash
[GSC-DKML018:lapack-3.7.0 mwh5316$ ls
BLAS DOCS SRC librefblas.a
CBLAS INSTALL TESTING libtmglib.a
CMAKE LAPACKE lapack.pc.in make.inc
CMakeLists.txt LICENSE lapack_build.cmake make.inc.example
CTestConfig.cmake Makefile lapack_testing.py
CTestCustom.cmake.in README liblapack.a
GSC-DKML018:lapack-3.7.0 mwh5316$
Congratulations!
You have compiled the LAPACK libraries.