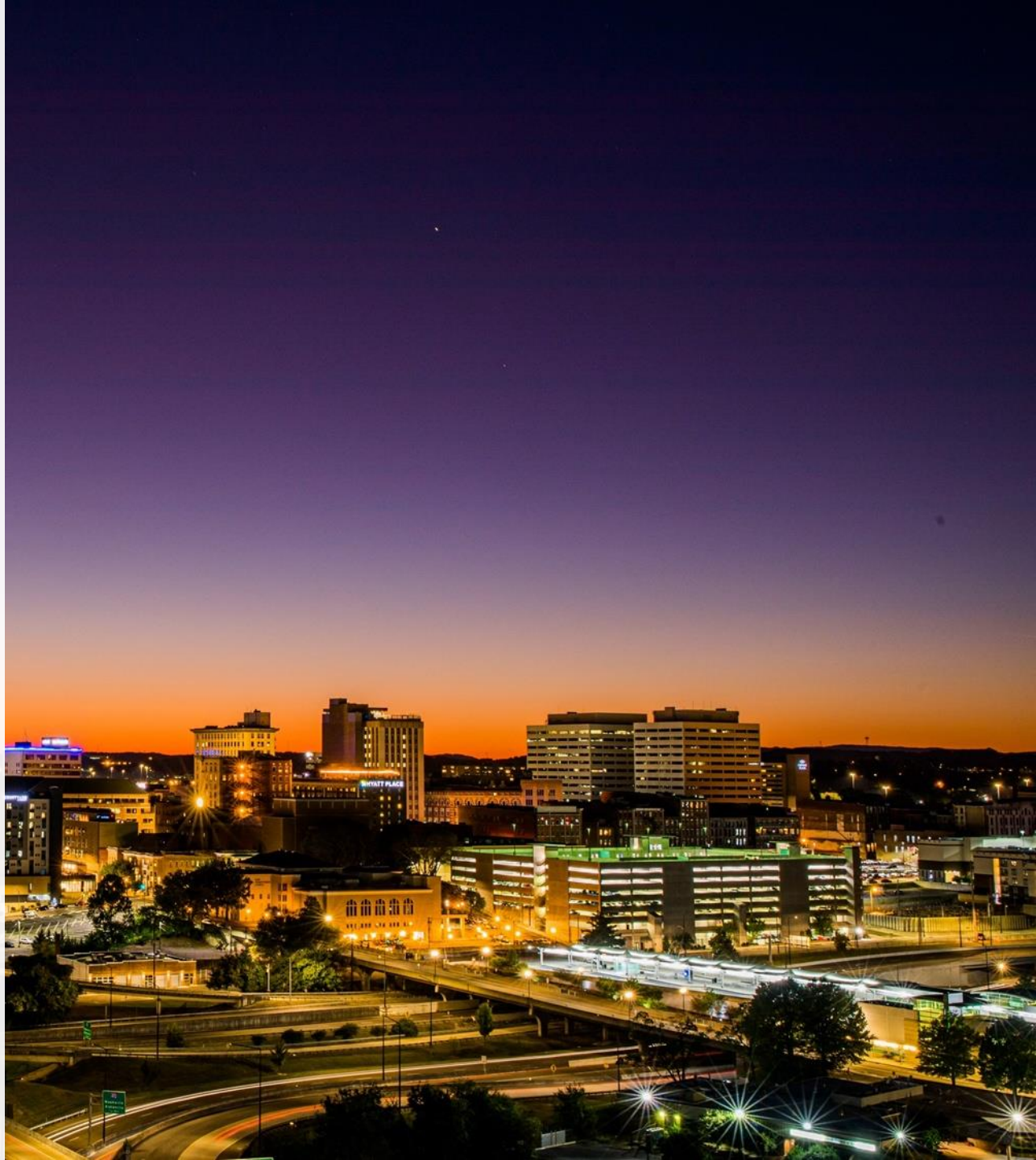
NE697: Introduction to Geant4

C++ Classes, Geant4 Intro

September 23rd, 2021

Dr. Micah Folsom

THE UNIVERSITY OF TENNESSEE KNOXVILLE



Today's Agenda

- Administrative items
- Finish class inheritance
- Compile Geant4 and run exampleB1
- Geant4 basics

Last Time, On NE697…

- Assignment 3
  - How's it going?

- Class inheritance

Compiling Geant4

- I encourage you to compile it on your own system (Linux/OSX)
  - Make a folder in your home dir on the server, apps/, and do it in there if you need to
- You know CMake and how to compile – same deal
- It takes a little bit of time, so we'll start this up now
- -DCMAKE = cmake argument
- -DGEANT4 = geant4-specific argument
- [DEMO]

C++: Class Inheritance

- [DEMO]
  - Reminder: the goal is to prevent writing redundant code and to make objects extensible and flexible
  - Bases, abstract bases
  - Virtual functions, pure virtual functions
    - magnitude()
  - Point2D, Point3D
  - Using a Point3D instance with a Point2D pointer

End of C++ Content

- We now have all the basic C++ skills needed to use Geant4
- Any outstanding questions?
- Would another C++ assignment be beneficial?
  - Extending mc1d for non-0 starting positions, multi-directional particles, new interaction types (“scattering” where you skip positions or change directions?)