

## **NDP Coding Bootcamp**

Aug 27: 1-3:30pm, TBRC C2110

Aug 28: 1-3pm, TBRC C2195

Matt Budde, PhD

[mbudde@mcw.edu](mailto:mbudde@mcw.edu)

### **Goal:**

All materials are hosted on the web: <https://github.com/mbudde/NDPprogramming>

- The course will go at a pace dictated by your familiarity and experience. So please ask questions and engage, this is your time to learn.
- Coding may be unfamiliar, but it can save you countless time and effort in the future.
- You do not need to install programs on your computer to use the course materials.

### **Before meeting:**

Please try to look through an introduction to the python language. You do not need to read it in depth or even understand it, but even just looking through some of the content may help you appreciate what coding entails.

[https://library.oapen.org/bitstream/id/56d27e73-e92a-4398-8198-239be7aacc93/2020\\_Book\\_IntroductionToScientificProgra.pdf](https://library.oapen.org/bitstream/id/56d27e73-e92a-4398-8198-239be7aacc93/2020_Book_IntroductionToScientificProgra.pdf)

You may also use the github link above to view course materials. Or load the notebooks/scripts we will cover during the class: <https://gesis.mybinder.org/v2/gh/mbudde/NDPprogramming/main>

For continuing beyond the bootcamp, I recommend using:

- Visual Studio Code (code editor): <https://code.visualstudio.com/Download>
- Miniconda (python installation and manager): <https://www.anaconda.com/download/success>

You can install these beforehand but we will go over how to use them.

### **Day 1: Introduction to Python and programming environments**

- Powerpoint lecture of python basics; orienting you to programming environments, how to run programs, etc.
- Using jupyter notebooks as an introduction to python; variables, conditional statements, lists, functions, and packages.
- How-to get started on your own: navigating vscode, anaconda, and using AI.

### **Day 2: Advanced Concepts and Hands-on**

- Recap of Day 1 and questions.
- Using VScode and conda.
- Adding AI to accelerate programming.
- Creating figures with python and matplotlib.
- pandas for data tables.
- Good coding practices, code sharing and collaborating.
- Free practice, hands-on help, or other topics of interest.