**9:00–12:00**

## Machine Learning / TensorFlow
### Dr. Benji Oswald

This workshop will introduce participants to Machine Learning algorithms and the TensorFlow platform. We will discuss the various options for installing or otherwise accessing TensorFlow, including using containers, cloud providers, and UI resources. Example datasets will be explored in an interactive session using Jupyter Notebooks. Some experience with Python required. **Participants will need to a laptop to the workshop.**

**Agenda:**
1.   Introduction
    A.   Introduction to Machine Learning
    B.   TensorFlow Background
    C.   How to get TensorFlow
    D.   General Data Pre-processing for Machine Learning

2.   Example uses of TensorFlow
    A.   Predictive Model
    B.   Continuous Data Modeling
    C.   Classifier Model

3.   User projects as time allows

**1:00–5:00**

## Big Data: Web Services and Cloud Computing
### Dr. Katherine Hegewisch, Dr. Luke Sheneman

This workshop will introduce universal features and challenges in Big Data, as well as solutions accomplished through web services and cloud computing. Hands-on and instructor-led examples will look at big climate data utilizing THREDDS web services and Google Earth Engine cloud computing. Web service examples will be shown using Jupyter Notebooks and in the creation of web visualization tools. The workshop will also highlight diverse big data research examples across the University of Idaho campus and connect participants to others with similar interests. **Participants will need to bring a laptop to the workshop.**

**Agenda:**
1.   Introduction to Big Data
    a. Big Data in general
    b. Big Data at University of Idaho
    c. Participant Introductions

2. Big Data on Desktop Computers
    a. Data Wrangling (Formats, Services, Tools)
    b. Data Analysis (Issues, Parallelization, Software)
    c. Hands-on activity in Jupyter (Python) Notebook

3. Big Data on the Web
    a. Hosting Data
    b. Data Wrangling
    c. Data Visualization (GUIs, Web Frameworks, Web Programming)
    d. Instructor-led example in JavaScript

4. Big Data in the Cloud
    a. Cloud Services (Google, Amazon, Microsoft)
    b. Instructor-led example with Google Earth Engine

5. Wrap up

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