## Resource Justification:

We are requesting 120 m.medium instances with 6 cores, 16 GB RAM, and 130 GB VM space each for each instructor and student for 2 weeks, plus some "hot spares" and backup machines for when start-up doesn't work for new tutorials. The total request is for service units (6 cores \* 24 hrs/day \* 15 days \* 120 instances). To accommodate large size data files, an additional 100 GB of storage volumes are requested for each instance. Persistent storage beyond the duration of the course (22-July to 1-August-2019) is not required.

We are budgeting for the full time period because students sometimes don't shut down their machines, but we will teach them how to shut down and start up new machines as part of the course.

These calculations are based on running a similarly sized course for eight previous years with approximately 360 students total on AWS cloud services and Jetstream.

Resources: IU/TACC (Jetstream)