

**Names:**

## **Physics and Math of Sustainable Energy: Lab Week 03. Fall 2021**

**Goals:**

Students will practice measuring shade with the Solar Pathfinder.

Students will calculate the impact of shading on solar production.

**Instructions:**

Split into three groups.

Set up your Solar Pathfinder to measure the shading in front of the Studio 5+6 building.

Take a picture from directly above the Solar Pathfinder when it is fully set up.

Draw the shading on the card provided with the Solar Pathfinder.

Calculate how much shading there is for each month of the year.

Repeat in another location near Studio 5+6, if you think the shading will be different.

See the printout from PVWatts that shows the production of a 60-panel solar array on Studio 5+6 with zero shading.

Use your shade calculations to correct the solar production estimate for each month.

How does shading affect the total annual output?

How does shading affect the capacity factor?

When you are done, please hand in the worksheet (just one per group).