Every DCS classroom with a data projector has a VGA cable that may be used to connect a laptop to the projector. The VGA port on a laptop consists of three rows of five holes. All classrooms equipped with the Digital Classroom Podium and some Pixie and Crestron classrooms have HDMI inputs that may also be used to project from laptops.

To see if your classroom has a data projector, search for the room online at dcs.rutgers.edu and click on the “Technology” tab. To see if your room also has a HDMI input, click on “Classroom Features” and check “Additional Items.”

Newer laptops may not have a VGA or HDMI port. If your laptop does not have a VGA or HDMI port, you will need to purchase an adapter that allows you to connect one of these two cables to your laptop. Please note: if you purchase a HDMI to VGA adapter, we encourage you to buy one with a power supply.

**Getting Started**

1. Turn on the system and select “Laptop.”
2. Connect the VGA or HDMI cable to your laptop’s VGA or HDMI port. If you are using a HDMI or VGA adapter, plug the adapter into your laptop and connect the provided cable to the other end of the adapter. In DCS rooms where the VGA and HDMI cables are not attached to the system, you will need to connect the other end of this cable to the system jack.
3. Turn on your laptop. After your desktop has loaded, your laptop image should project. If it does not, please use the following instructions that pertain to your laptop’s operating system.

**Windows 7 and 8**

1. While holding the Windows button located on the keyboard, press “P.” Your display options will appear.
2. While continuing to hold the Windows button, press “P” to highlight each option.
3. Highlight “Duplicate” to project the image that appears on your laptop monitor. Highlight “Extend” to use the projector as a second monitor. You can then drag items off of your laptop monitor and on to the projected image.
4. Release the Windows button when you have highlighted the desired option.

**Windows XP**

1. Right click anywhere on the desktop.
2. Select “Graphic Options.”
3. Select “Output To.”
4. Select “Intel Dual Display Clone.”
5. Select “Monitor + Notebook.”

**Mac Laptops**

Mac laptops do not typically require users to prompt the laptop to project. Instead, Macs typically detect the projector on start up and send out the laptop image. If this does not happen automatically:

1. Select the “Apple” to open the Apple Menu (top left of the screen).
2. Select “System Preferences”
3. In the “Hardware” row, select “Displays.”
4. Click “Detect Displays.”

If this does not work, you may need to restart the laptop.
Adjusting the Resolution

Although most laptops will adjust the resolution of the image it sends out to the projector, sometimes the laptop and projector are unable to “handshake.” As a result, the laptop image will not project until you manually adjust the laptop resolution. While most classroom projectors use a resolution of 1024 x 768, newer projectors use a higher resolution. However, a good place to start is to set your laptop’s external display resolution to 1024 x 768.

If you would like to increase the quality of the projected image, you can then raise the resolution, stopping before you reach a resolution at which the image no longer projects. See the instructions below in order to access the resolution settings for laptops running Mac and Windows operating systems.

Windows 8

1. Navigate from the Metro Start screen to the main desktop by clicking on the “Desktop” tile or by pressing the “Start” button on the keyboard.

Right click anywhere on the desktop background and select “Screen Resolution.”

2. Under “Resolution,” move the slider to the resolution you want and click “Apply.”

Windows 7

Click on the Windows logo in the bottom left corner of the screen to open the Start Menu.

1. Select “Control Panel.”
2. Select “Display.”
3. Select “Adjust Resolution.”
4. Raise or lower the resolution.

Windows Vista

1. Click on the Windows logo in the bottom left corner of the screen to open the Start Menu.
2. Select “Control Panel.”
3. Select the “Appearance and Personalization” category.
4. Select “Adjust Screen Resolution.”

Adjust the resolution by dragging the resolution bar to the desired resolution.

5. Select “Apply” to view your changes.
6. Click “OK” if these changes are acceptable.

Windows XP

1. Click on “Start.”
2. Select “Display.”
3. On the “Settings” tab, under “Screen Resolution”, drag the slider to the desired resolution.
4. Select “Apply” to view your changes.

5. If the laptop is now projecting at the desired resolution, select “OK” in the pop-up window that has appeared. Your screen will turn black for a moment. Once your screen resolution changes, you have fifteen seconds to confirm the changes.
6. Click “Yes” to confirm the change. Click “No” to revert to the previous setting.

Mac Laptops

Select the “Apple” to open the Apple Menu (top left of the screen).

1. Select “System Preferences”
2. In the “Hardware” row, select “Displays.”
3. Two windows will appear. The “Color LCD” window contains display settings for the laptop monitor. The other window contains controls for the projector. Use those controls to raise or lower the resolution.

Choosing the Optimal Resolution for Mac Laptops Running Mavericks (OS X)

If using a VGA cable:
1. Click on the “Arrangement” tab.
2. If it not already selected, click on the checkbox next to “Mirror Displays.”
3. You will now have two windows. The first labeled, “Built-in Display” is for the laptop monitor. The second is for the projector.
4. In the both windows, perform the following steps:
   • click on the “Display” tab.
   • In the “Optimize for” pull down menu, select “Built-in Display.”
   • Beneath that pull down, ensure the button for “Best for Built-in Display” is selected.

If using an HDMI cable:
1. Click on the “Arrangement” tab.
2. Check the “Mirror Displays” check box in the lower left portion of the window.
3. Select the “Display” tab.
4. Under “Optimize for,” you will have two options. The first is “Built-in Display.” The second will vary depending on what classroom you are in. Select the second option.
5. Under the pull-down, select the first option: “Best for....”