Due to the issues with the CPLD breakout board, it will be necessary to add an additional component onto the breadboard in order to properly power the CPLD. In order to make this simple for everyone in lab (TA's and Students alike), I have figured out what is likely the most efficient way to place the CPLD and properly power it.

The CPLD runs of 3.3V core logic but can accept I/O inputs of up to 5V. This means that if properly powered, all the inputs and outputs to switches, LED's, TTL chips, etc. can still use the normal +5V rail that has been setup. However, in order to power the 3.3V core logic a voltage regulator will be needed. The voltage regulator should be in every student's kit, but there will be spares available in the lab.

In addition to the 3.3V core logic, two pins on the CPLD need to be grounded. These are pins 17, and 36. They cannot be used for I/O purposes for any reason.

The Voltage Regulator

As seen in the above images, the voltage regulator needs a ground (GND) connection and a voltage input (V_IN) and it will provide a voltage output (V_OUT). The output of this particular regulator is 3.3V.

Note: The pins of the regulator are designed to be flexible and you will need to bend them to fit the regulator into the breadboard. Don't be afraid to bend the pins as needed until it fits properly.
The Connections

First place the voltage regulator directly below the jumper wires from the power supply posts (see picture below) with pin 1 on ground and pin 2 on 5V. This should put the $V_{out}$ pin of the regulator on Node #4 (from the top of the A column) on the right side of the breadboard. Next use a small yellow jumper directly below that to connect Node #5 on the right side to ground.

Now take a small orange jumper and jump from Node #4 ACROSS the DIP island to Node #5. FOLLOW THE IMAGE CAREFULLY! Do NOT accidently tie $V_{out}$ to Ground!

Next, to ground Pins 17 and 36 as needed make the following connections:
1. Connect Node #15 to ground with a small yellow jumper (as seen below).
2. Connect Node #10 to ground ACROSS the DIP island (from Node #15) with a blue wire.
CPLD Breakout Board Placement

Now in order to complete the setup the CPLD Breakout Board needs to be precisely placed in the orientation shown below. The first pin below the black CPLD socket (labeled ‘G’, for Ground) should be placed on Node #5. This will give the CPLD the ground connection and the +3.3V power connection on the other side.

Note: Please do not get confused by the label on the board which says 5V. That label is for a previous CPLD. This CPLD DOES NOT TAKE 5V. The current CPLD requires that the 5V label MUST be connected to the 3.3V output of the voltage regulator.

If you set up the wires correctly in the Connections step then your CPLD will now be correctly connected and safe to be powered and used in your labs.

Figure 3 - Side View of Properly Placed CPLD Breakout Board
Figure 4 - Top View of Properly Placed CPLD Breakout Board