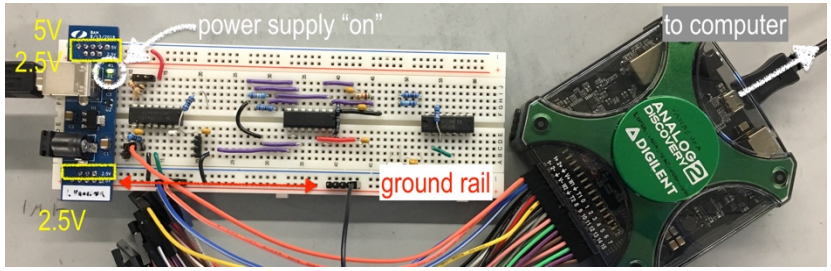
ISIM Troubleshooting guide

When the results are not what we expected, we need to probe our *expectations*. [**bold** are common…check those first]

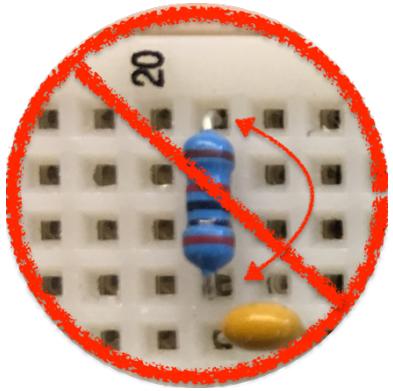
An active computer USB port → powers a functioning power supply circuit → which is properly plugged into a breadboard → that contains a properly-wired circuit, → connected correctly to an Analog Discovery → that connects to another USB port on your computer → that passes signals to the WAVEFORMS software, → configured to send and receive signals to your circuit → and properly display the signals.

We *expect* the following, all of which can be tested:

1. The power supply is receiving power from your computer's USB port. ***Is the supply plugged in to your computer?***
2. The **power supply has +5V and +2.5V** as expected.
3. The power supply is plugged into the outer "rails" of the breadboard
4. The circuit is wired properly on the breadboard (test using a circuit diagram)
    a. **no wires are in the same numbered row** unless they are one "node"
    b. "chips" are properly powered and referenced to their correct V
    c. the values of the components (resistors, capacitors) are correct
    d. components and chips are connected as indicated in the circuit diagram



5. The Analog Discovery (AD) is connected correctly to the circuit
    a. **the AD is connected to the circuit & power** supply ground rail
    b. the Ch+1 is connected to measure V_{out}; the Ch-1 is connected to a reference V
    c. the Ch+2 is connected to measure a different V_{out}; the Ch-2 is connected to a reference V
    d. the AD is **not participating** in the circuit as a circuit element ($Z_{internal}$ ~ 1 MOhm)
    e. the W1 is connected as a V source to the correct input point in the circuit (if relevant)



6. The Analog Discovery is plugged into a different USB port on your computer
    a. Open WAVEFORMS after plugging in the Analog Discovery (AD)
    b. WAVEFORMS (WF) should recognize the AD upon program start up
    c. If it does not, check for tightly-seated cable connections at AD and computer, then restart WF
7. The WAVEFORMS software is properly configured to send and receive signals
    a. The virtual AD devices are "Running"
    b. The proper virtual devices (e.g., scope, wave generator, etc.) are open
    c. The inputs/outputs of the virtual devices are set on the correct values, offsets, etc.
8. The **Scope is set to a scale where the signal can be displayed**
    a. Put cursor in Range: and/or Base: and use ⬆or ⬇ until the signal is visible.