Learning Objectives of Lab

- Understand capillary flow and how a capillary valve works.
- Explore how the flow of fluid in a micro-channel depends on pressure and geometry.
- Practice delivering and cleansing mock samples.
Logistics

- Divide your team in half
  - One sub-team do Part A
  - Other sub-team start Part B (cleaning chip/chipholder)

- Teams combine when Part A is done

- Make sure everyone knows what the other team is doing.
Segment A of Lab 2

NOTE: No bubbles in water column.

Step 2

$\text{Step 3}$

$h_B$

$h_A$
Remove the existing PDMS top and acrylic bottom from the chipholder.

Clean the chipholder and new acrylic chip bottom and PDMS lid in the ultrasonic cleaner following the procedure in the video and also described in Supplement 2 of the lab procedure.

Follow the procedure carefully!
Segment B

- Assemble the chipholder and top and bottom using the generic printout for alignment.
  - Add a drop of water between the bottom of the chipholder and the acrylic chip. *This will eliminate air gaps.*
- Plug unused staging well holes.
- Practice pumping fluids with the syringe through the chip to help you design a better chip.
  - Make sure you have read *Supplement 1* on tips for using the chipholder.
- **DO NOT OVER-TIGHTEN THE NUTS ON THE CHIPHOLDER!**