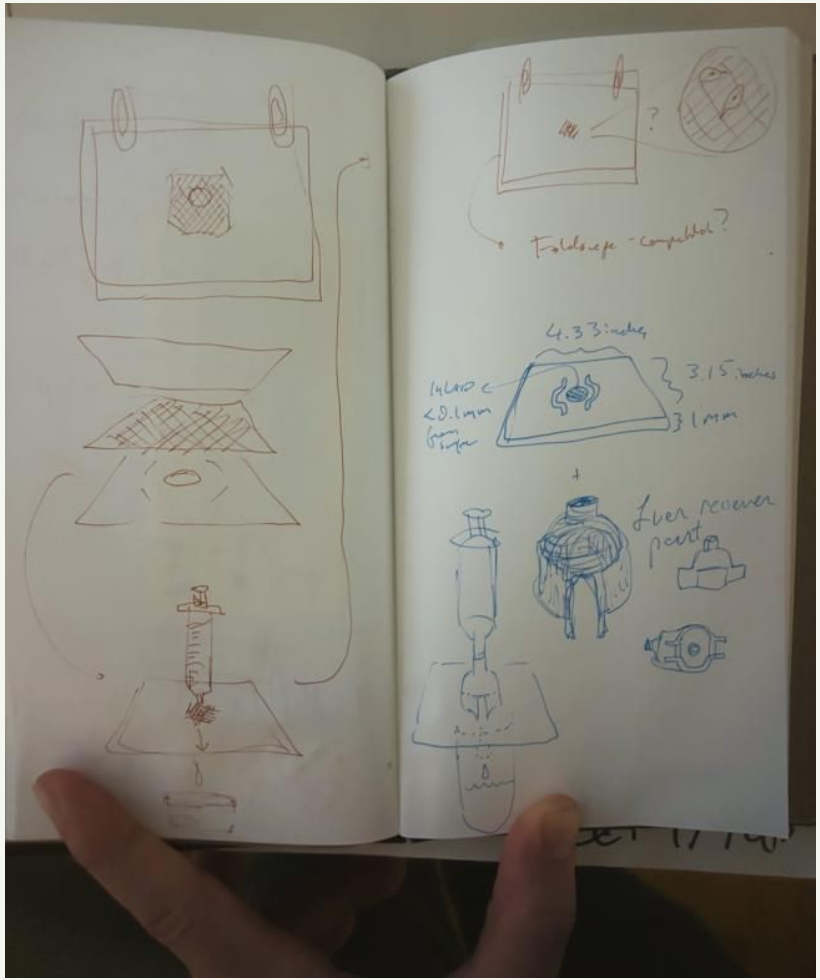
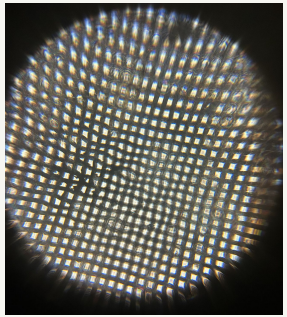
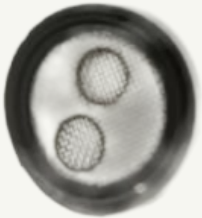
HEALTH IN YOUR HANDS
DIAGNOSTICS

SchistoFilter - A Foldscope-compatible, reusable urine filter for schistosomiasis diagnostics in the field



What about filtration?





Can filtration be reusable?

Iterations of SchistoFilter

What are the advantages of filtering and viewing as opposed to trapping & viewing?

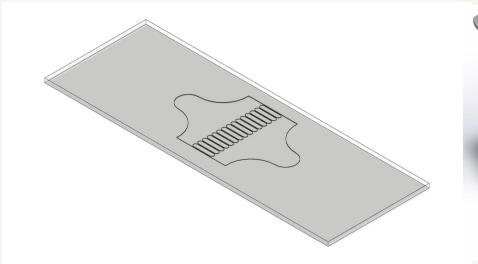
Hardware, Prototyping and Development

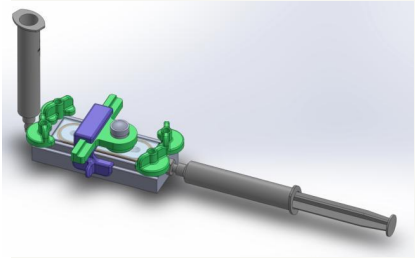
Prototyping:

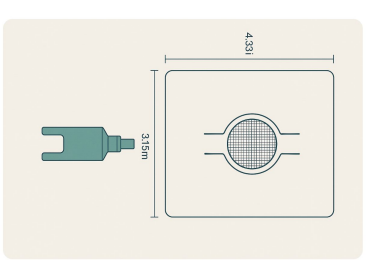
- Microfluidics Device
- Wedge Filter Device
- Thin Mesh Device

Testing/Performance

1. Access S. mansoni and S. Haematobium parasitic eggs to test device performance.
2. Measure visibility and trapping efficiency of schistosomiasis eggs







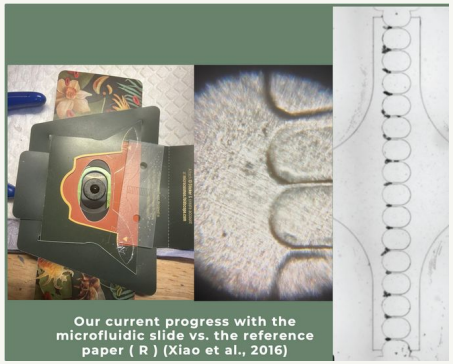


Figure 3: Microfluidics Device

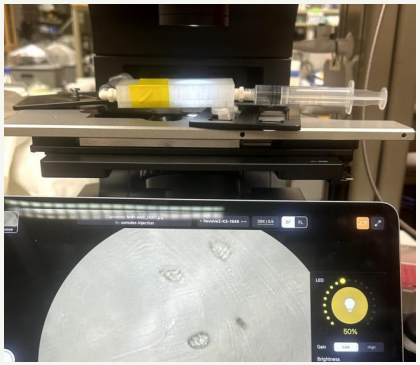
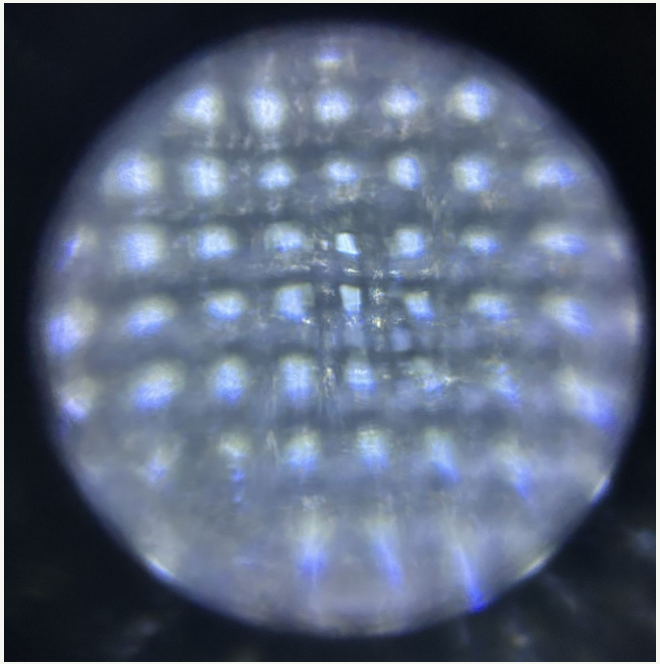


Figure 4: Wedge Filter Device

Figure 5: Thin Mesh Device



Easy to cut,
Hard to do layered 3D print with

20 micron nylon mesh

*Multiple layers where egg can get caught

SchistoFilter (Card!)

***Push urine through a screen, load in Foldscope, view eggs**

Goal: Reusable parts, easy to assemble and use

V1: taped on the filter

Fluid ran through fine, eggs caught just fine.

Problem: flimsy

SchistoFilter (Card!)

***Stainless steel mesh**

Goal: Reusable parts, easy to assemble and use

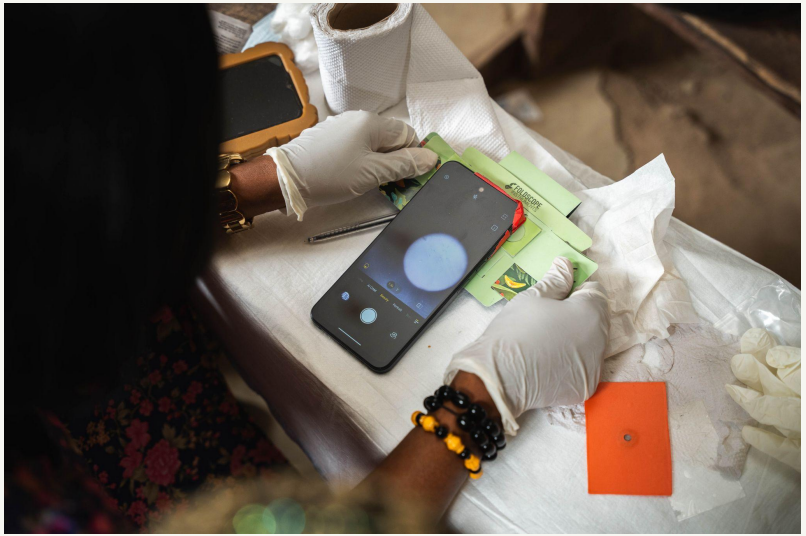
V2: assembled with seal-all,
parts lasercut

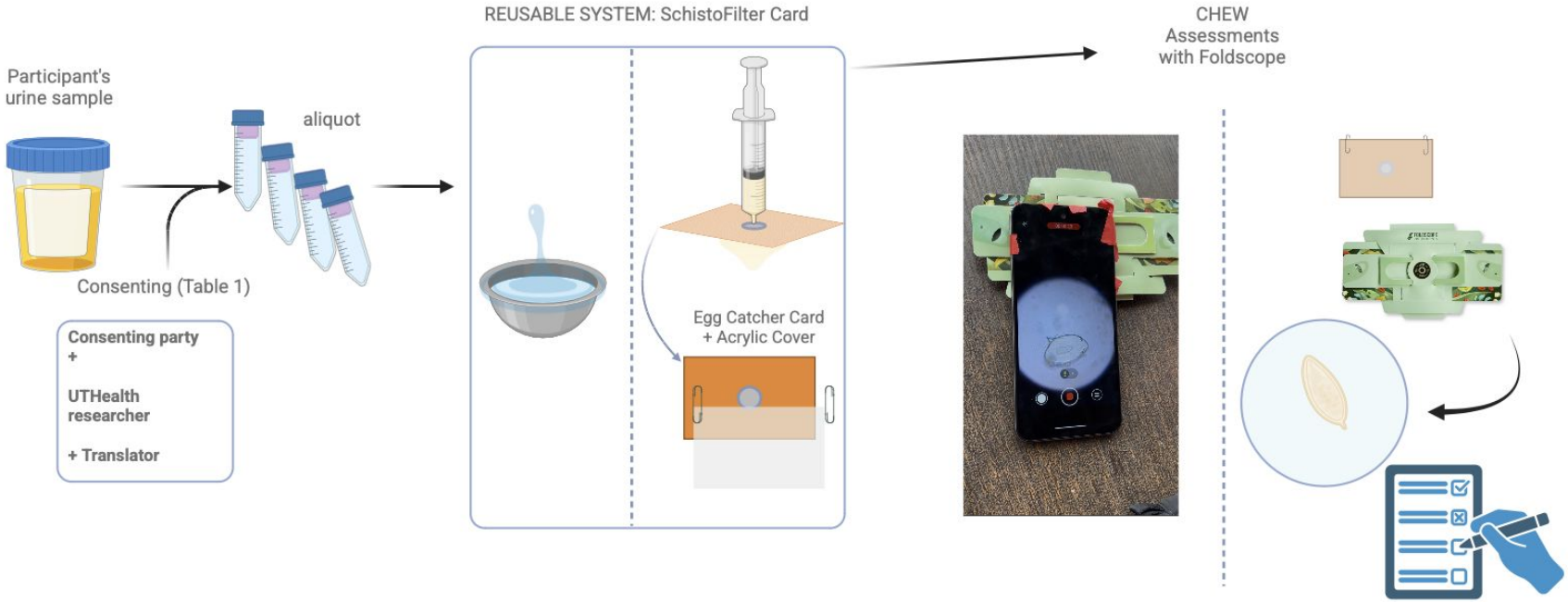
Fluid ran through fine, eggs
caught just fine.

Cleanable!

Field-ready


Nitrile Examination Gloves
Powder Free Latex Free Non-sterile
100





Consenting, Demographics, Aliquots → **Processing** → **Imaging & Results**

1. Consenting
2. Demographics questionnaire
3. Sample collection & aliquots
   Gold standard volume collected first
4. Two CHEWS, two conditions
   *Experimental Reusable SchistoFilter
   *Foldscope assessment
5. **Record assessment & Sample storage**
6. Begin cleaning process for the Reusable SchistoFilter

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