Near term projects to DO:

1. test SlimeZistor some more, observe and record data again, try different time scales
2. test same with gate attempt on different materials of slime
3. build pump enclosure
4. once pump works, build a fractal pump system where one pump drives large volume through many small area channels, with electrical access
5. do experiments trying to use heat and pressure to make channels in thermo plastics of various shapes and sizes, try different tools and molds and temperatures and methods
6. Try simple biological detector experiments, buying enzymes and testing saliva and stuff electrically. If this works, work on design of fractal trash bio metrology tool with high throughput
7. if the electrical transport of tiny channels is working nicely, try different layers of n and p type liquids, try making a pn junction and testing it in the normal slimeZistor way with pulse and response. If that works, try NPN, see if it's a transistor
8. build a simple electrolysis reactor to make H2 and O2
9. build O2 plasma machine, play with patterns, make tiny plasma tubes with high voltage generators

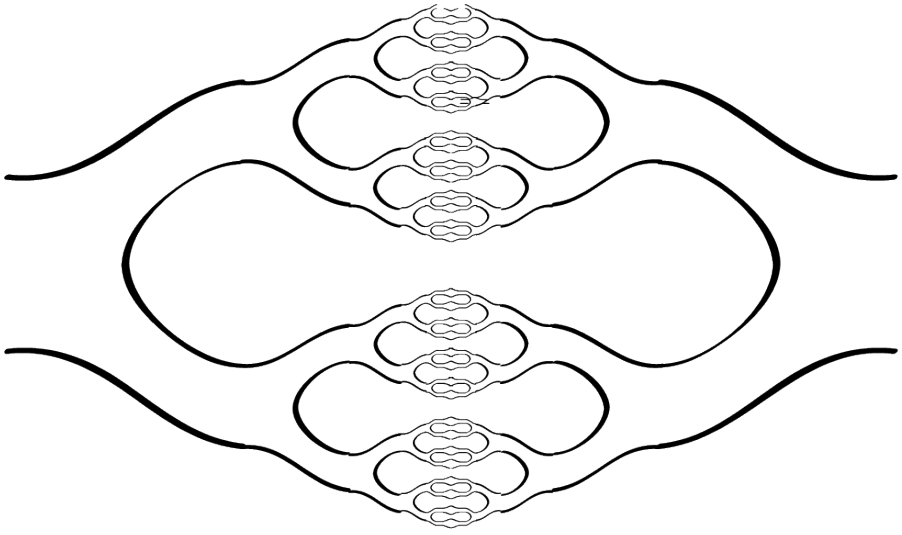


Figure 1: image

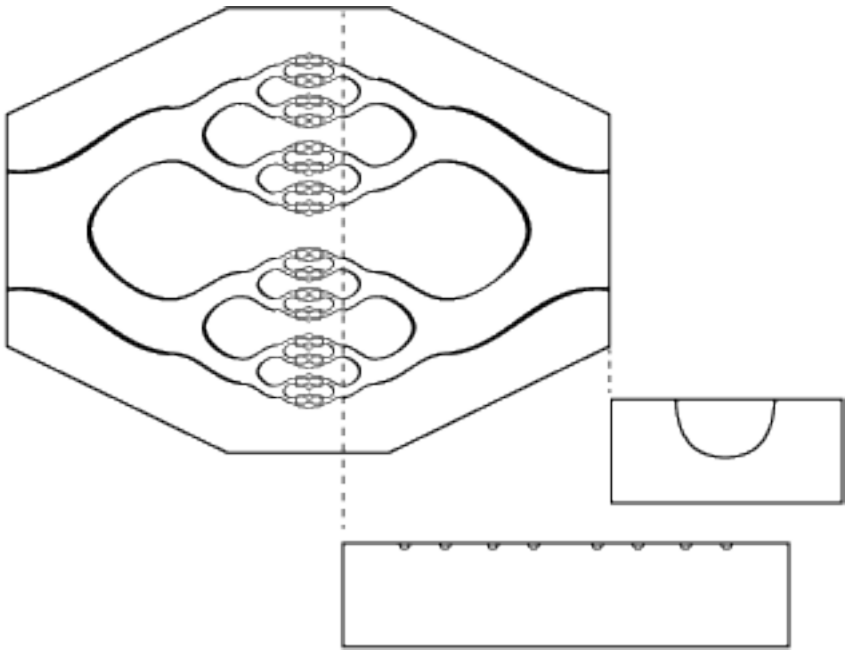


Figure 2: Fractal Reactor Cartoon

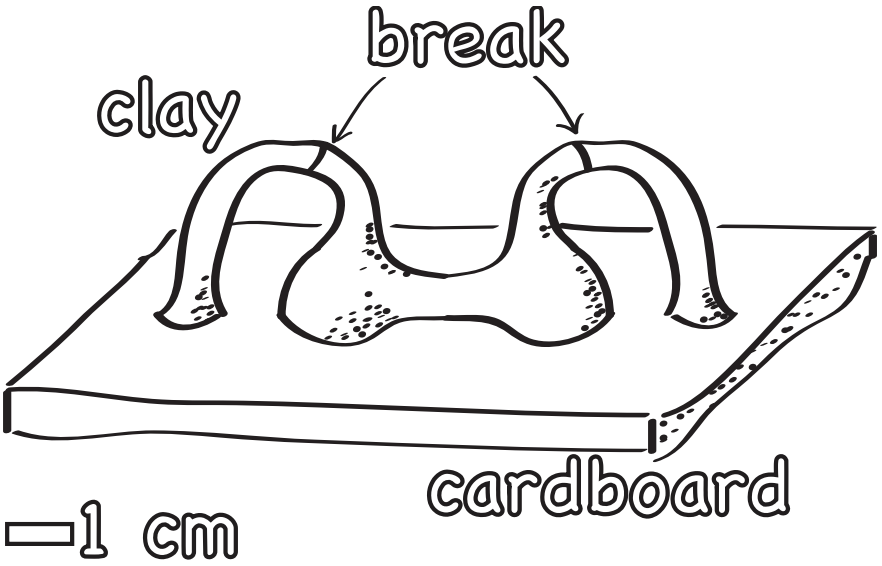


Figure 3: image

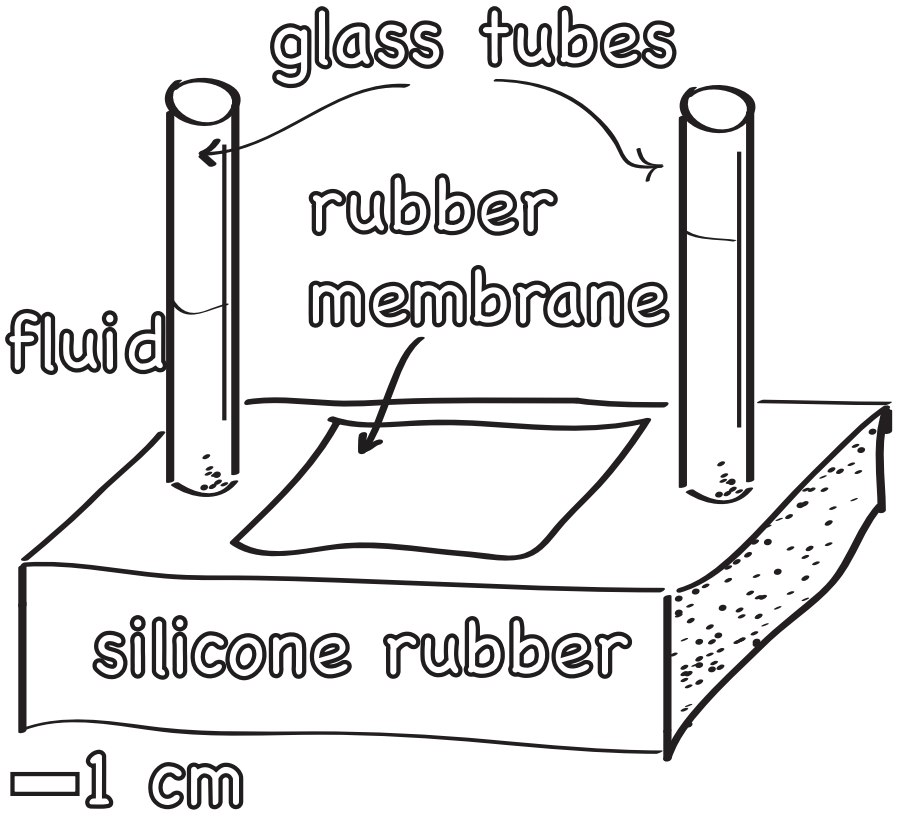
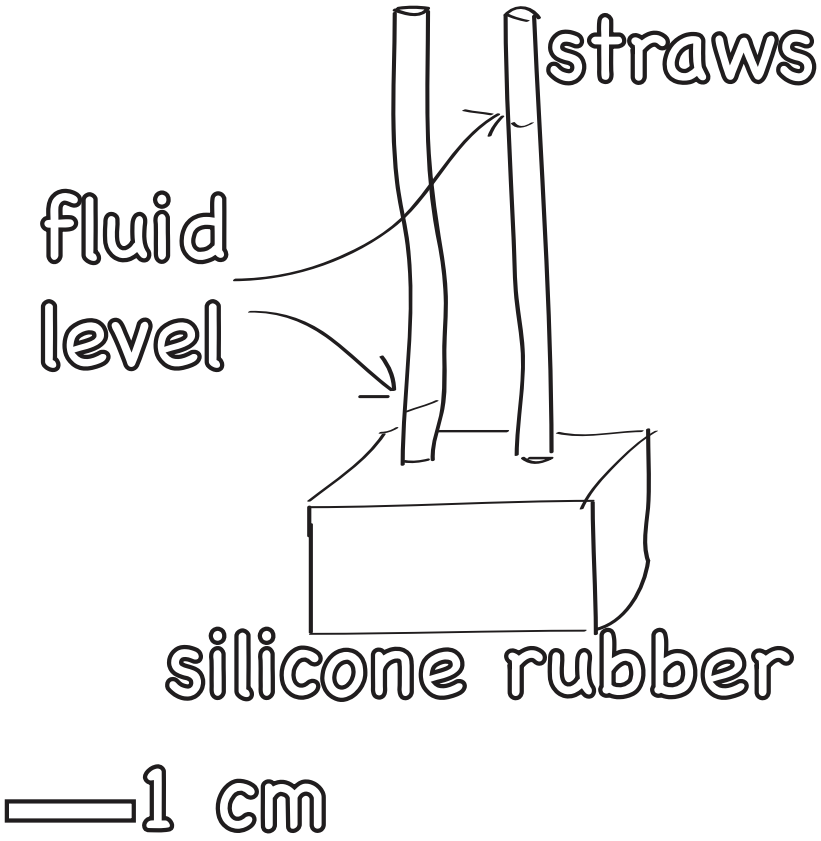


Figure 4: image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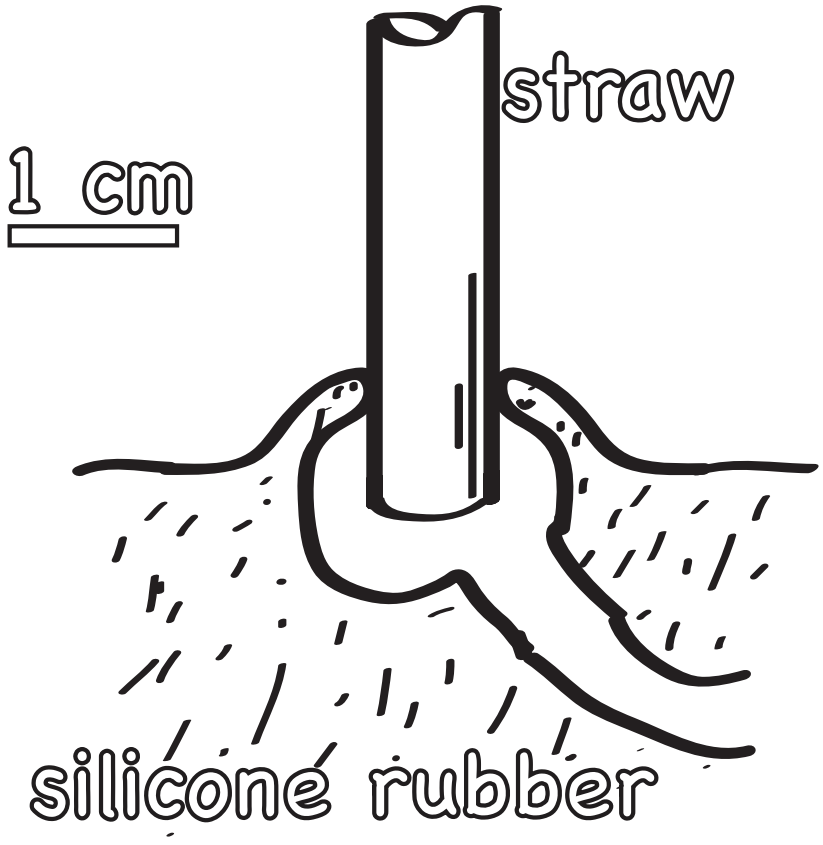
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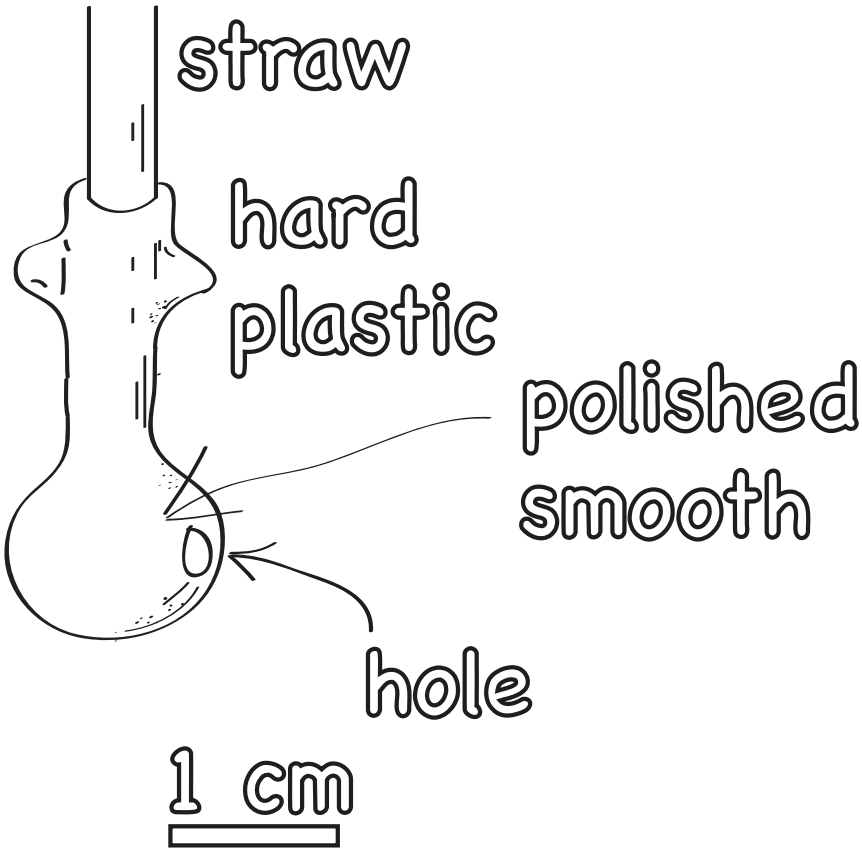
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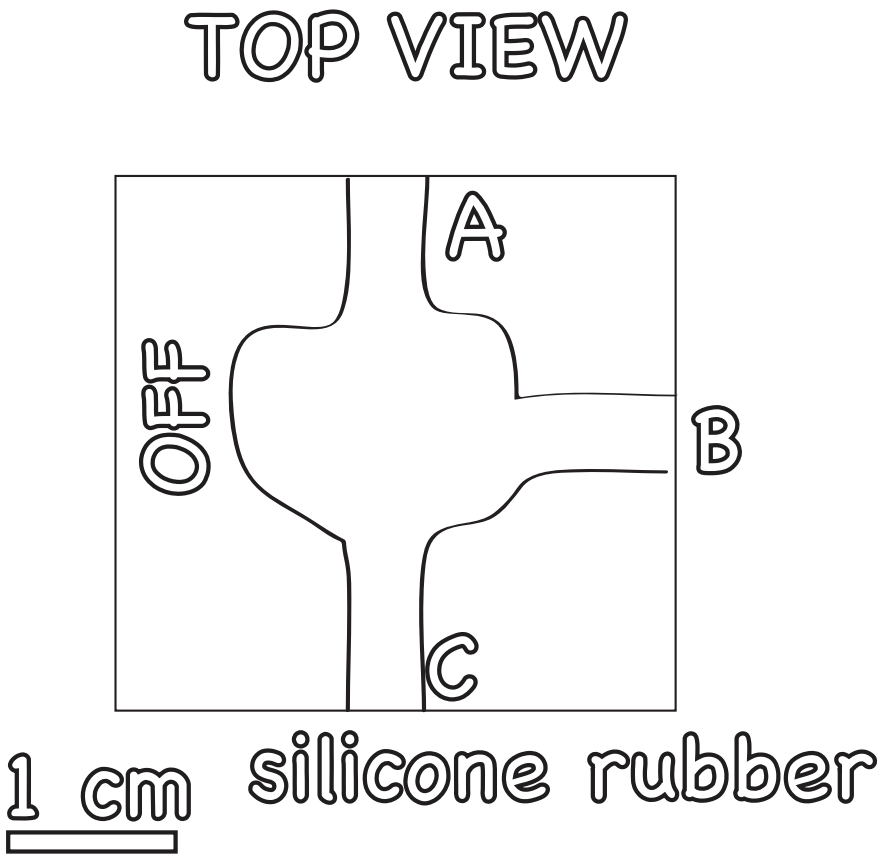

boba straws can be the standard input!!!!!!

Fractal Reactors starts the whole thing, moving fluids around, actually make pumps at different sizes, make a fractal setup

finding your thermo plastics, working them, being safe

The Fractal concept, some history, Mandelbrot etc.

make fractal plumbing using simple hot rework tools for thermo plastics

This chapter almost certainly needs to get merged with Fractal Reactors and Living Matter, which will be lengthy. Possibly the two topics should be two chapters, but with one being much more focused on building the demos and the other on how to scale the system up and apply it in the future.

Computers and Authoritarianism

A different model for computers

Measuring the Slime of the World

Building up SlimeZistor TEchnology

Building the Computer you Actually Need

CPU Clocks are a Monotheist Conspiracy

Laminar Fluidic nanocomputer. Layers of fluids join in tiny channels at the nano scale using the fractal reactor, ions in solution create doping, electrolytes conduct electriity to copper on grids, wires move around as needed in fluids as well,

Fractal Reactors and Living Matter

Everything is made of thermo plastics. Everything has pumps and valves driven by the usual Philosophy Engines. Fuilds that can be pumped through any of the various tubes, allowing close to neutarlly bouyant robots to flow through to any location, and edit the tubes using heated tools. So the whole thing can self-edit by moving robotic workers around with pumps.

Biological systems can easily be integrated into the whole thing, grown, moved around, analyzed, combined, and used.

Everything can be pumped with fluids, vacuum, air, other gasses, hot or cold fluids, biological slime, and various plasmas.

HIgh voltages can drive electrostatic actuators anywhere and high currents can drive coils to drive magnets anywhere.

Basic test systems can be made by cutting with heated tools into soft thermo plastics like vinyl to create channels, then pressing Saran wrap(half mil film of PVC or LDPE) or silicone or PMMA across the top with adhesive to make a flexible or rigid top.

The Shit Reactor

THis is how the shit is processed. A turd drops into a large end of a fractal structure. it's partially immersed in water which has slow flow, and the air over the top has a constant flow rate also out to the branches from the trunks. Robots of varying sizes cut up the turd parts and distribute them down tubes, then cut them up more with smaller robots and drag them down more tubes, all with fluid and air flow. Another set of tubes moves heat along to control temperature in reactor chambers, on the smallest scale, with largest posible surface area to connect to dirt based bio reactor.

last section:

could be the full nano synthesis method, with the ideas shown below and crude proof of principle for some of these, but this can be speculative, have lots of art. Art here can show POV nano robots, doing all sorts of things, blasting with plasma, using catalytic particles to make nano wires etc. the turd reactor, food reactors, robot fabrication reactors, living things inside the reactors, breeding bacteria to do work, brewing chemicals as needed.

Ideas From Feb 16, 2016:

1. Chemical potential gradients and electrochemistry should be usable to move atoms around in the network through the liquids with just mu gradient, no water mass flow needed
2. one layer of the fractal reactor should be optical, with light microscopes everywhere, groups of users can monitor different cameras to work together to rumble the nano and micro and meso robots
3. wire puller robots can pull different diameters of copper wire around by swimming through the liquid tunnels or hopping or dragging around through the tunnels
4. atomically sharp metal tips on robots can create atomic scale nano fabrication by swimming around and engaging electirclaly, chemcially and mechanically with objects in the liquid
5. Motion for floating neutrally bouyant robots can be almost entirely from outside water pressure from various directional pumps in the walls of passages, which act as very focused pumps to move objects, including but not exclusively robots, around.

6. Robots sholud be able to cut or blast or melt their way around through thermoplastics. Or maybe a plasma etch could be made directional with some sort of external E and B fields

7. my ball valve design should be able to be controlled using coils and the philosophy engine control, and valves should go from one to many, making very complex networks of many sizes and directions.
8. From a couple days ago: electrochemistry and surface chemistry and chemical potential gradients should be usable to increase or decrease the size of channels in controlled ways
9. a power source for robots could be energy delivered through the fluids in the form of ion current

Another fabrication idea: HDPE bottle fab

INstead of 3d printers which take a uniform spool, 3d fabricators should use existing forms from bottles etc to build arbitrary shapes, usion a plastic fusion machine with heat to make plastic heat and pressure welds. This can be done with a robotic arm that has human supervision but which is quasi automated. I could build this now. Bottle fusion based technology combined with skeletron could be very universal, do plumbing, ultra light flying drones. This technology can be great for plumbing of all sizes.

HDPE!!

ALso note that in terms of means of production this is why blender is important. Someoen with no resources but a computer can use blender to design a thing, then someone else with no machines can use a VR rig to hand assemble stuff from HDPE bottles using a hand heater tool with trash wizard electric heating.

Must build tool as part of trash wizard stick 1.0 which combines vibration, heat, and pressure to weld any plastic to plastic. Build hopping/rolling drones out of this technoology.

ALso need to demonstrate spring physics of the plastic bottle components. This could be perfect for the hop/running/rolling donres! magnets and drive coils can hit resonance of plastic springs, which fling the robot along like a running dog. This can also be used to make wings beat on a soaring drone.