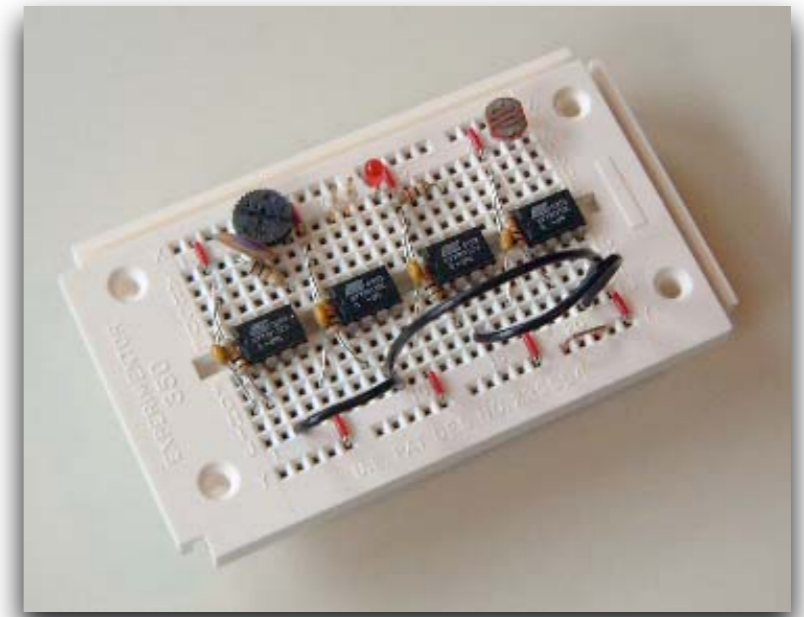
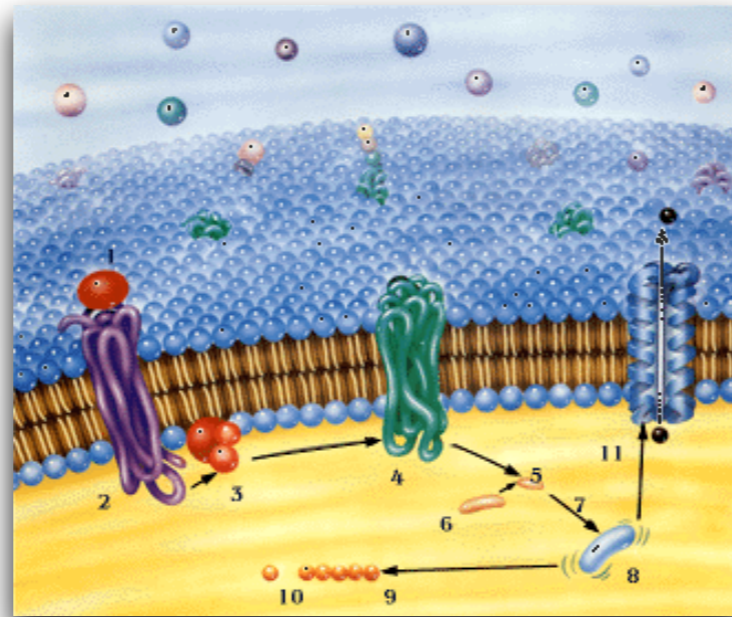


# What If Bacteria Designed Computers?

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Introducing Cybords  
and Bynase

Ward Cunningham  
DorkbotPDX 0x01



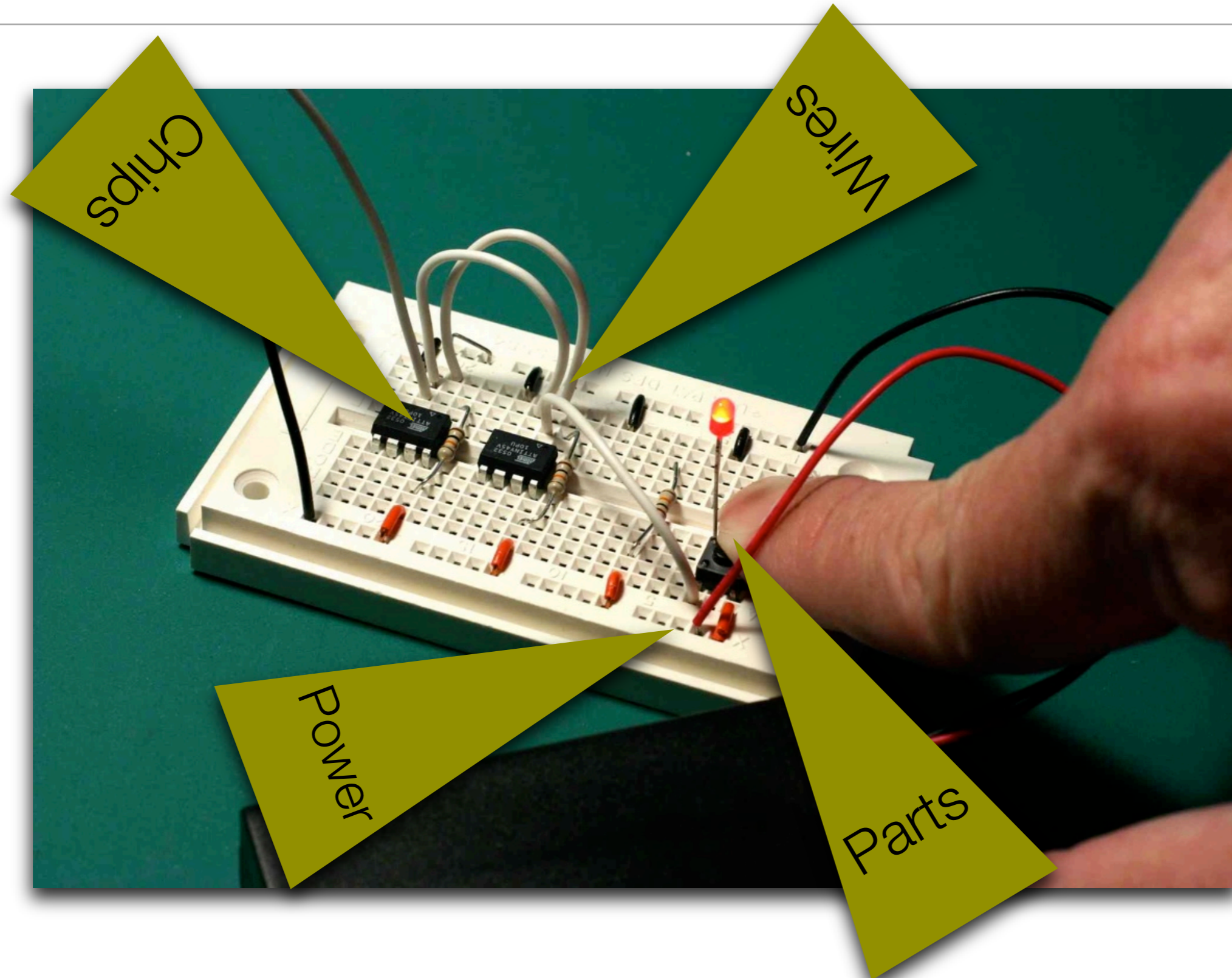
# American Glory

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# Cybords

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# Bynase

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send

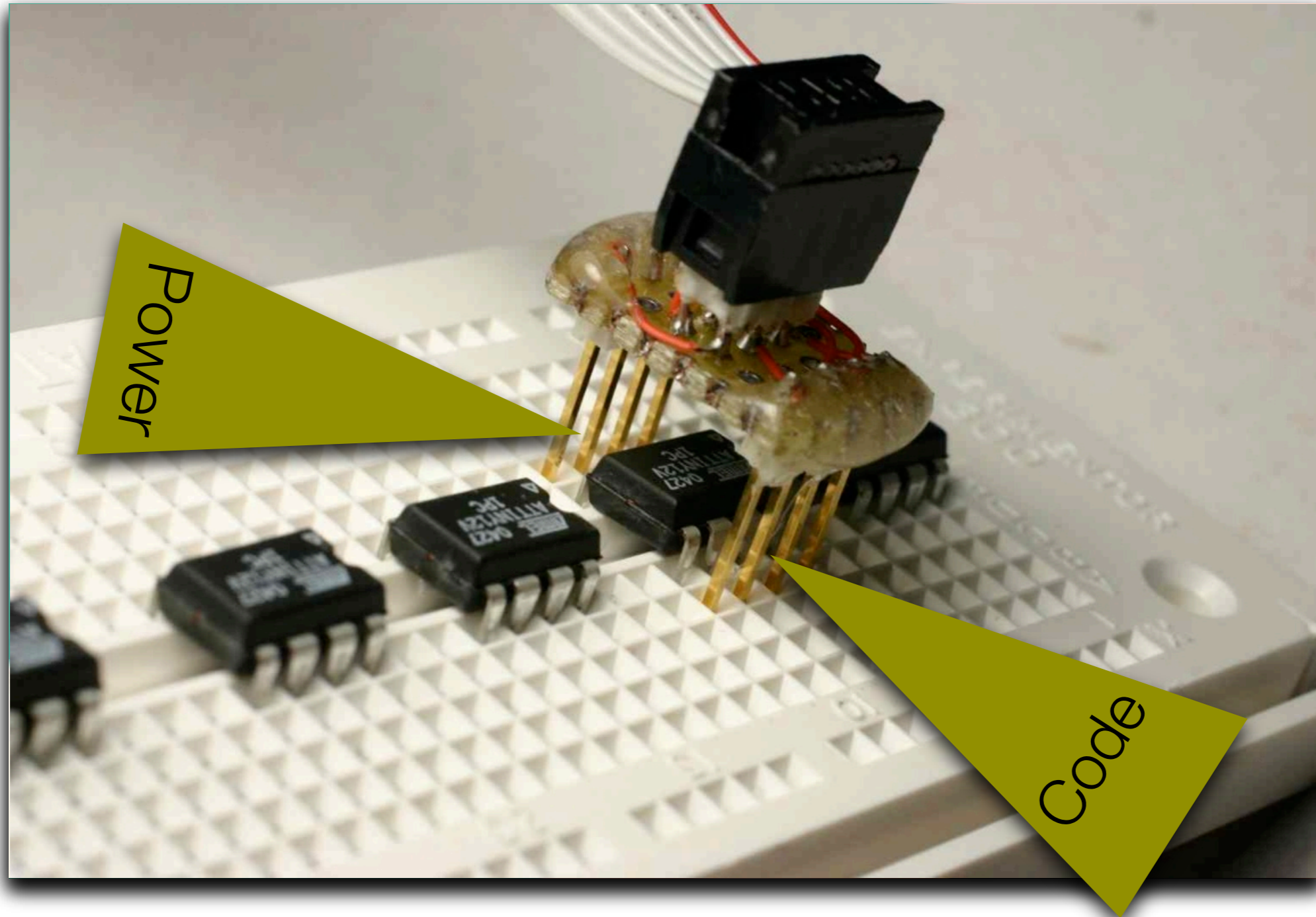
```
while true
  if value < random
    pulse low
  else
    pulse high
```

receive

```
result = 0
for 100 times
  if input is high
    result = result + 1
```

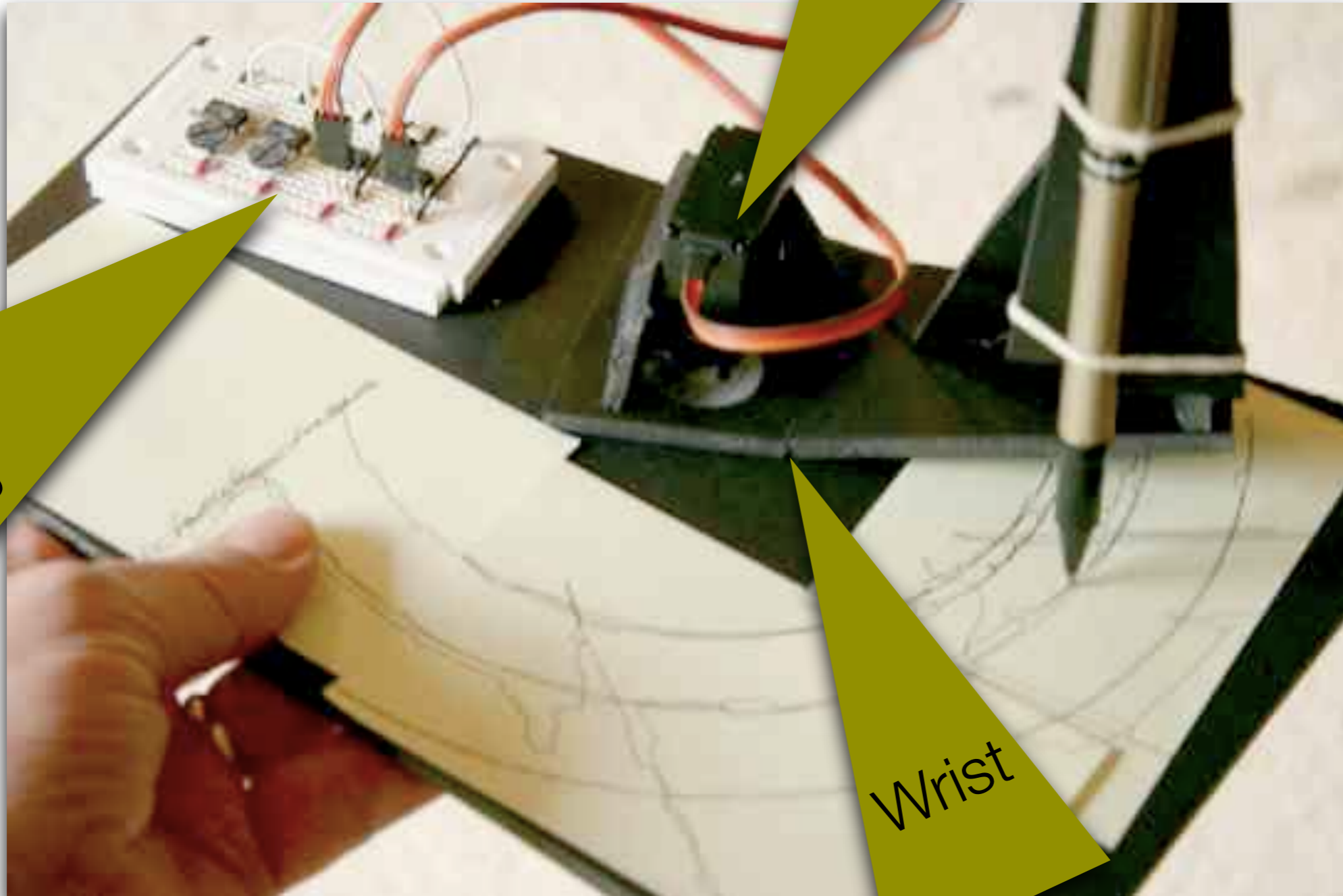
# Construction Technique

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# Hand Writing Device

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Motor

Chips

Wrist

# Graffiti Research Laboratory

Throwies



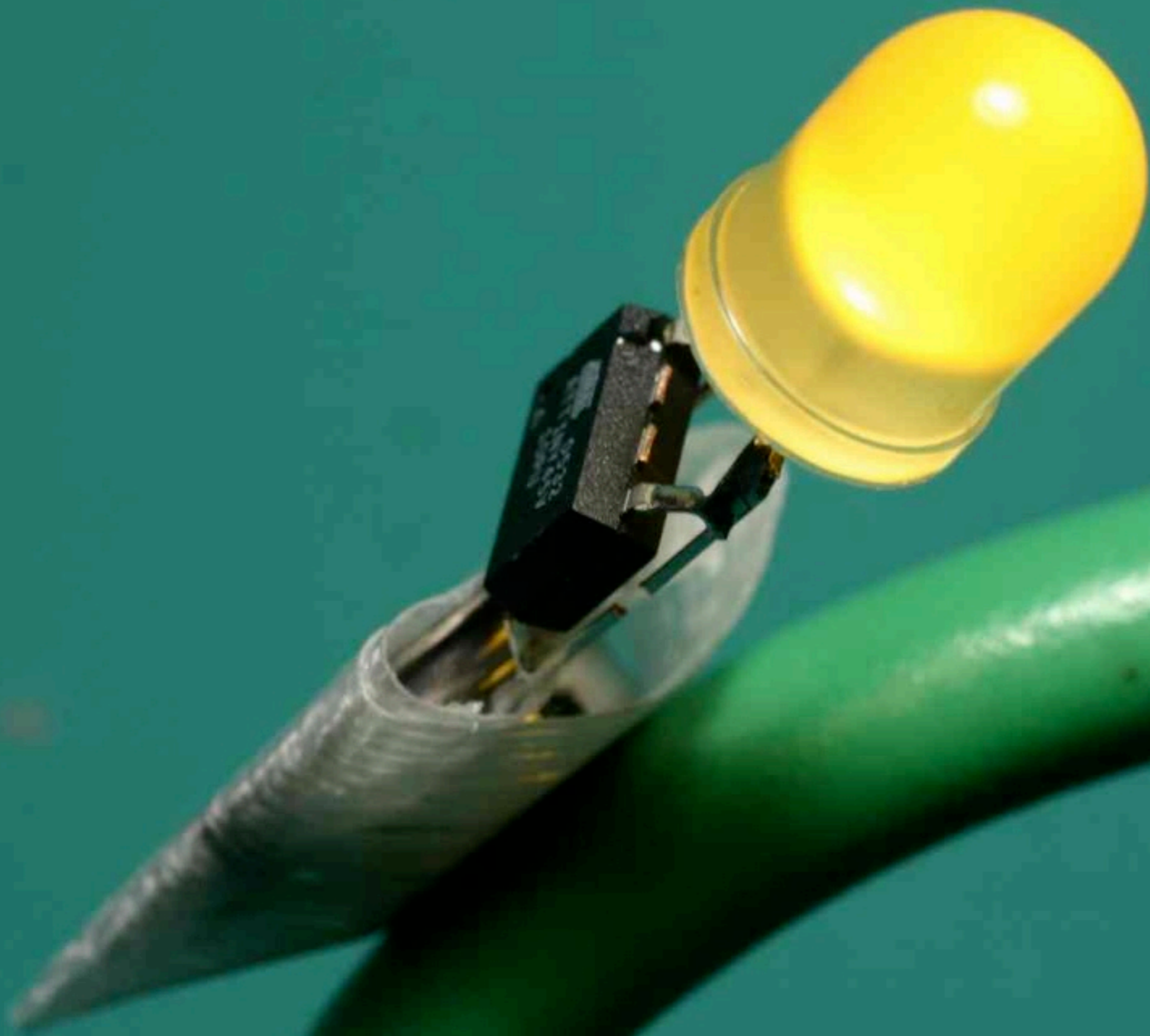
Throwie  
Talkie

# Ars Electronica, Linz

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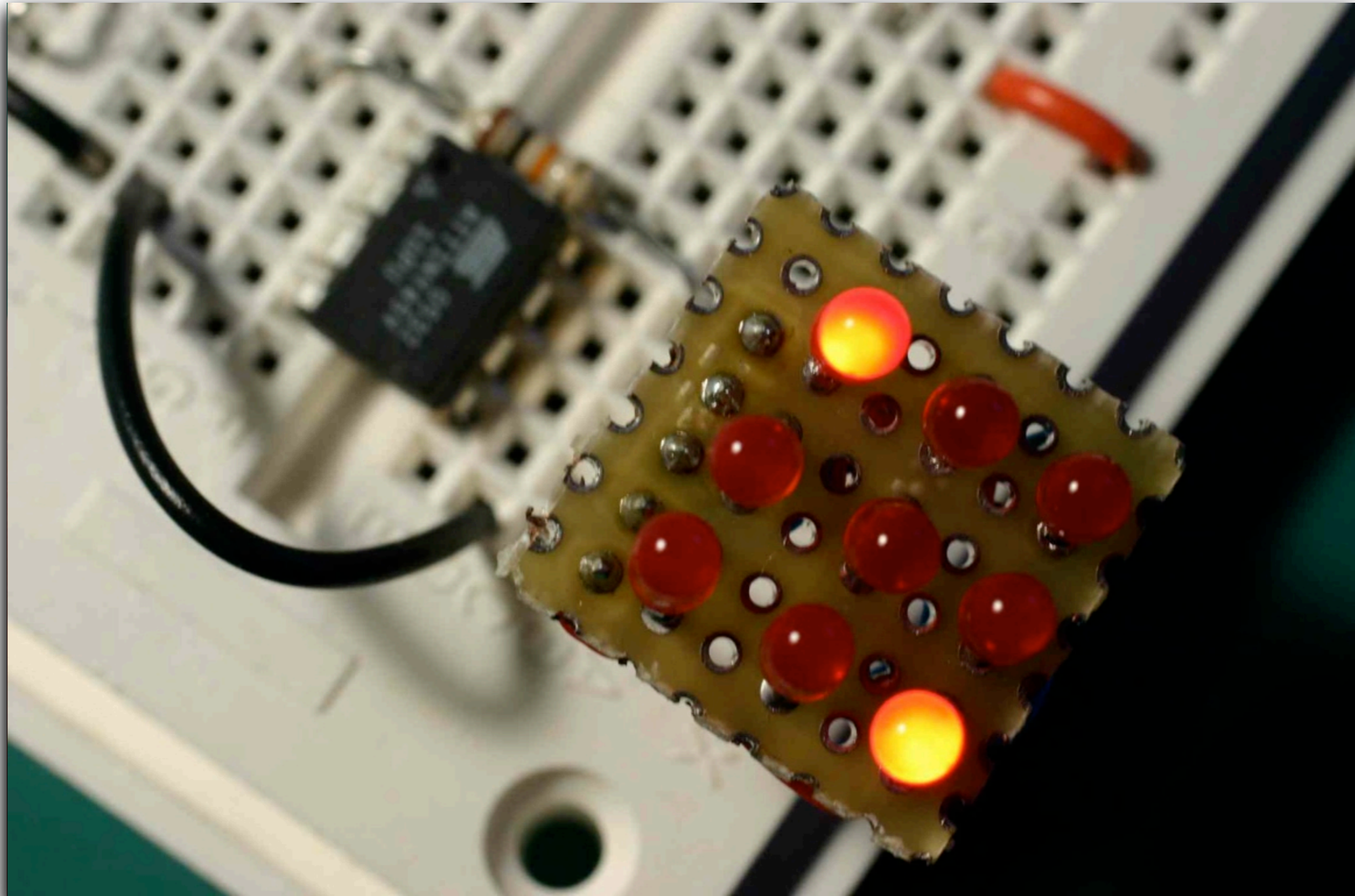






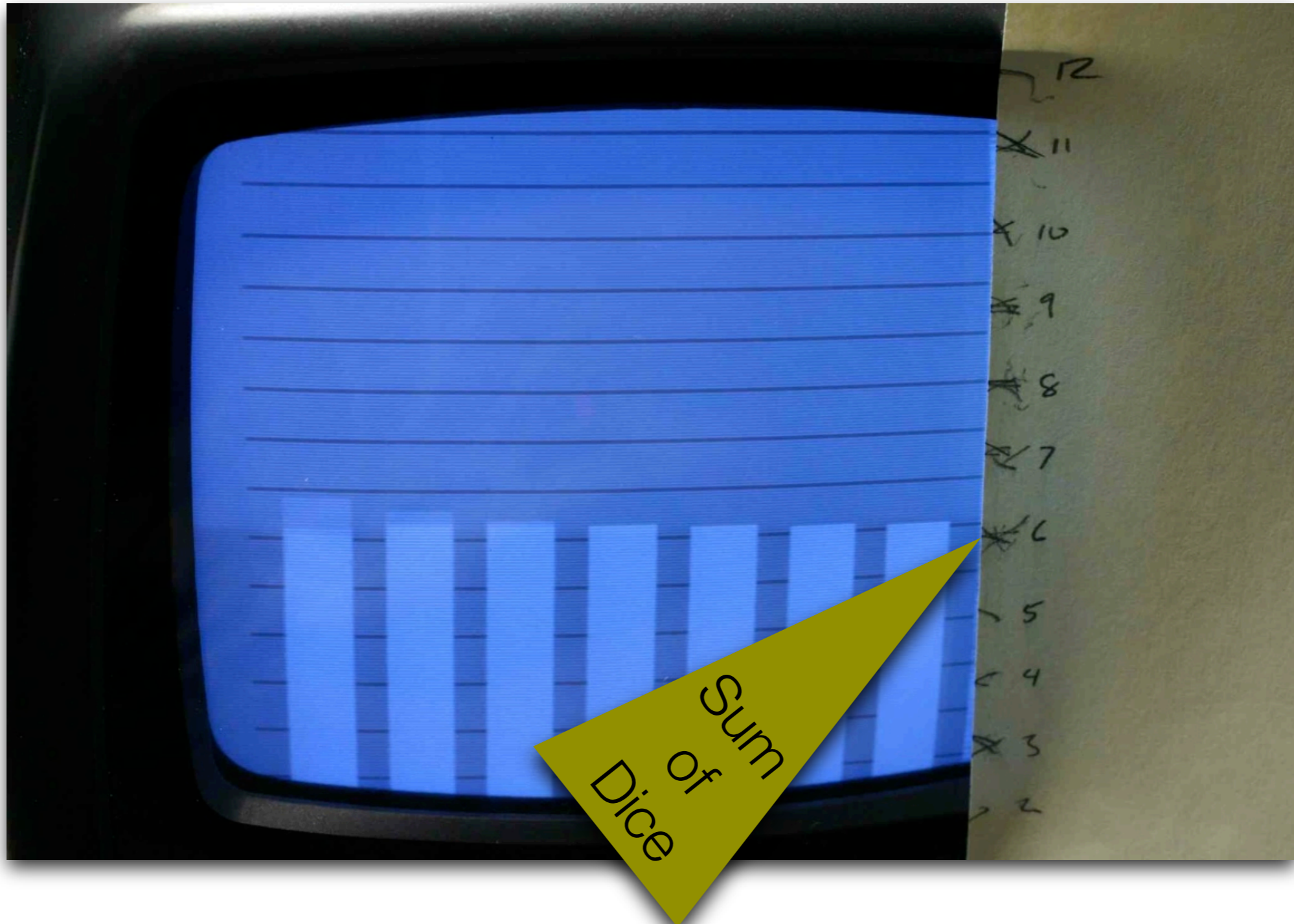
# Animated Display

---



# Random Variables

---



# Free Web Site

Search for Cybords

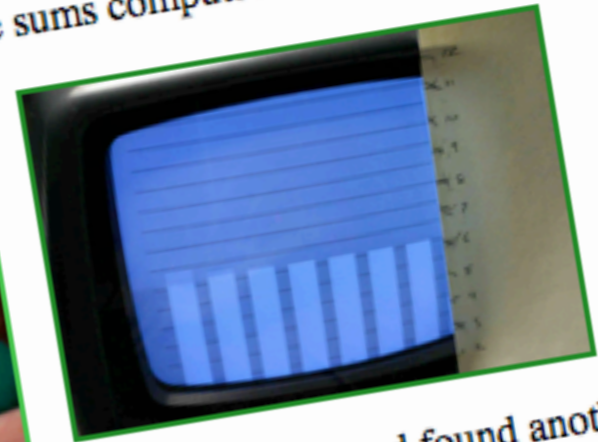
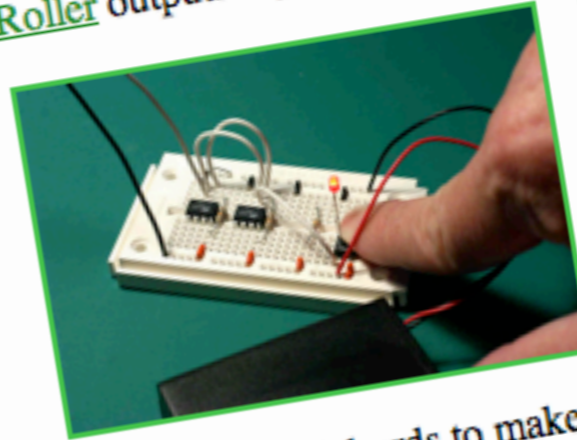
<http://c2.com/cybords>



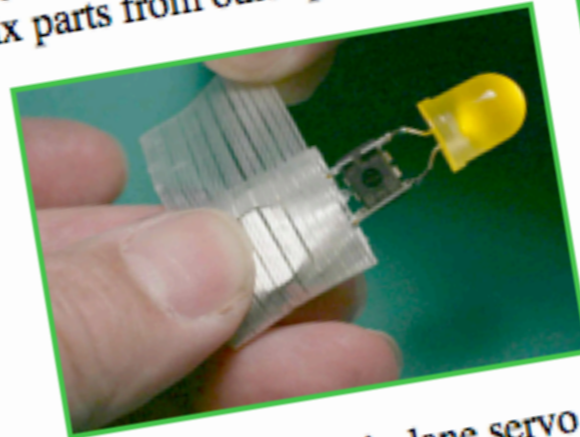
## Welcome Visitors

This experimenter friendly site supports the development and distribution of biologically inspired, Bynase enabled, circuits called Cybords.

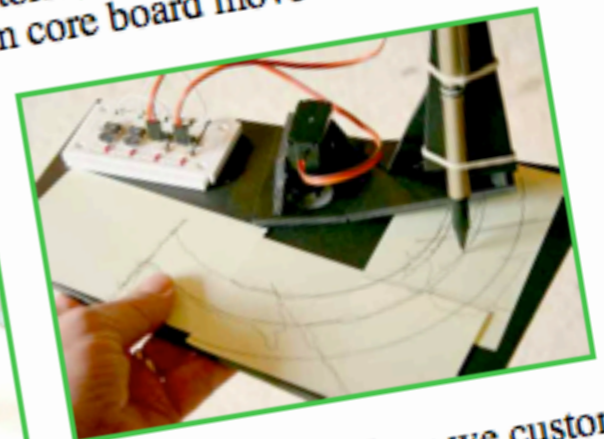
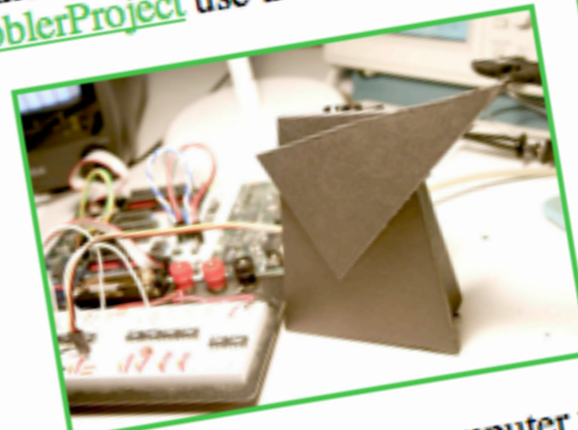
We've been experimenting with a part that simulates a rolling die. We can hook [DiceRoller](#) outputs together and get the sums computed for "free".



We've mashed up Cybords to make the [ThrowieTalkie](#) and found another way to mix parts from other projects to explore [VideoFeedback](#).

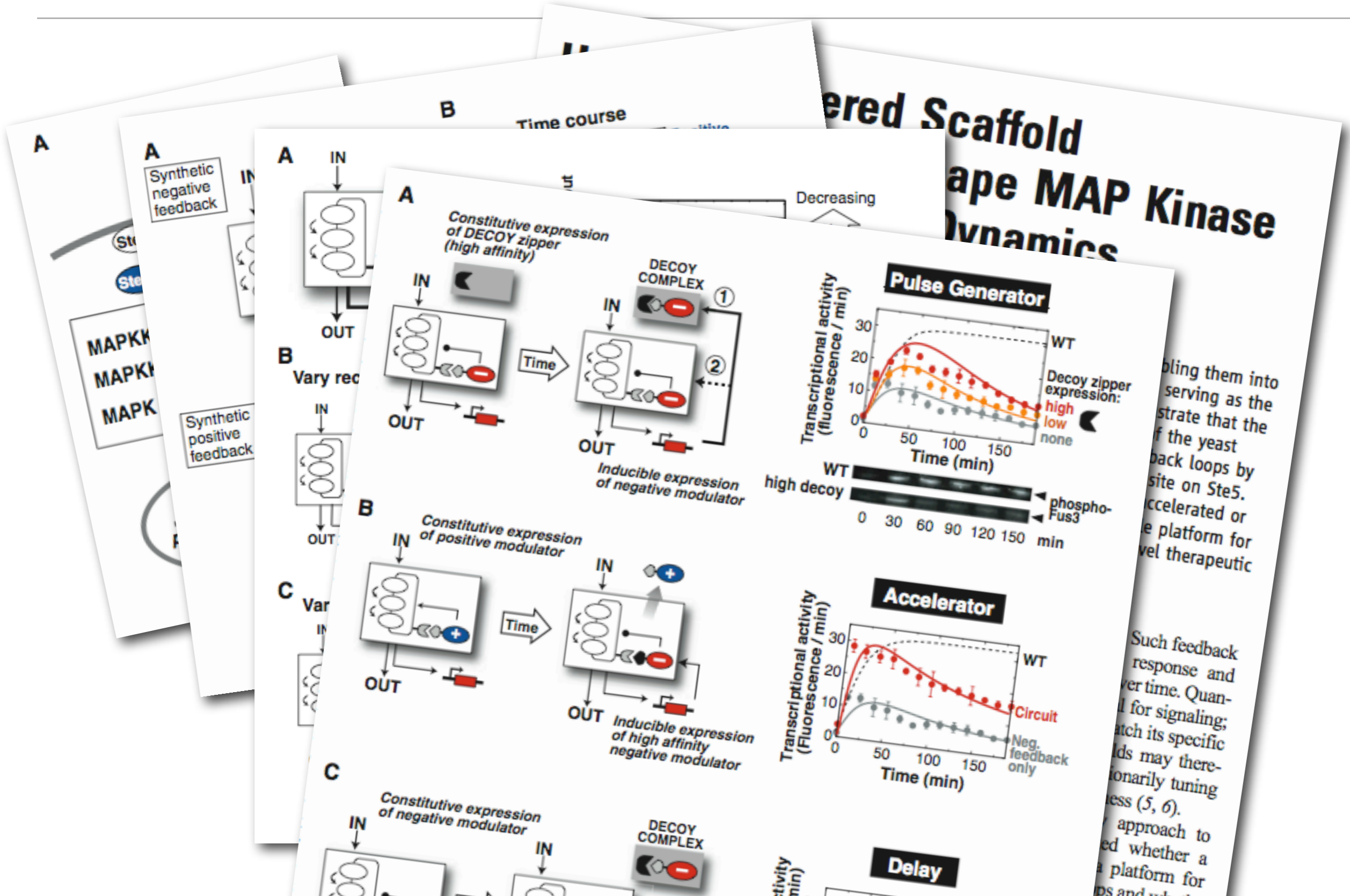


We like using model airplane servo motors. [ServoPointerProject](#) and the [ScribberProject](#) use them to make foam core board move in interesting ways.



computer for everything. But, since we customize the different parts. We distribute the work.

# Science, March 2008



## Engineered Scaffold Shape MAP Kinase Dynamics

...bling them into serving as the strate that the of the yeast back loops by site on Ste5. accelerated or e platform for vel therapeutic

Such feedback response and over time. Quant- l for signaling; atch its specific ds may there- ionarily tuning less (5, 6).

approach to ed whether a a platform for ps and what

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