

## Lighting up your Project

A workshop for the Rochester Makerspace (<https://rocmakers.org/>)

Bill Ball ([Bill@tinkerfarm.net](mailto:Bill@tinkerfarm.net), [wjball.bsky.social](https://www.wjball.bsky.social))

### 1. Introductions

### 2. What are you communicating with light?

It's not just about illumination

Attention and signaling

Mood and emotion – the colors of white, direction, hard and soft

Story

-- Versus human vision and lighting context

### 3. Electrical considerations and measurements

Light measurements: lumens, color temperature, CRI (or % of gamut)

Power: AC vs. DC, polarity, watts = volts X amps

Voltage regulation and constant current elements

Power sources: AC adapters, USB, batteries

Wiring type and size

Connections, switches

Heat management

### 4. Sources of light

Incandescents

LED

Single component (current limiting resistors)

High-powered single color: power, color, heat management,  
diffusion

High CRI

COB elements

“Neopixels” (rgb LED strips)

Formats: hard base, strips, rgb vs wrgb

Powering and controlling

Programming

Newish LED filaments

Novelty filament designs

Super flexible filaments

Other wearable/cosplay friendly

Niche sources

Electroluminescent

Laser

5. Experimentation time

6. Lighting installation

7. External lighting control

Dimming

Lensing

Diffusion & gelling

Directing (hard and soft)

8. Some sources of components

Home Depot/Lowes, architectural lighting and LED strips

Adafruit, <https://www.adafruit.com> , LED strips, wearables

Aliexpress, <https://best.aliexpress.com/> , everything--direct from China

Evan Designs, <https://evandesigns.com/> , model/miniature lighting

The Electronic Goldmine, <https://theelectronicgoldmine.com> , surplus

Amazon Prime, <https://www.amazon.com> , quick delivery