OCN 479-001

Electronics 101

THE GREEN PROGRAM

EDUCATION ABROAD. REDEFINED. REINVENTED.

Short-term (8-10 days), hands-on study abroad trips focused on sustainability

Apply today to start your TGP journey!

ICELAND

1.5 CREDITS / 3 ECTS

Renewable Energy Innovation & Sustainability

Studying the impacts of climate change on a glacier

NEPAL

3 CREDITS / 6 ECTS

Microgrids for Rural Development

Installing 6kw of solar microgrids in a rural village

PERU

3 CREDITS / 6 ECTS

Water Resource Management & Sustainable Practices

Touring Machu Picchu's Hydroelectric power plant

BELIZE

SMART CERTIFICATE

Action for Sustainable Livelihoods & Coral Restoration

Snorkeling and monitoring the effects of climate change on our coral reefs

JAPAN

2 CREDITS / 4 ECTS

Disaster Mitigation & Nuclear to Renewable Transitions

Testing decommissioning robots at Japan's Atomic Energy Agency

AUSTRIA

1.5 CREDITS / 3 ECTS

Decarbonizing Energy Transitions & Climate Neutrality

Hiking in the Austrian Alps, touring wind, solar, and biomass power plants

UNCW Ambassador: Shelby Diehl | Contact: svd3491@uncw.edu | Connect: www.linkedin.com/in/shelby-diehl/

SECOORA
Southeast Coastal Ocean Observing Regional Association

STUDENT AND EARLY CAREER

FUNDING OPPORTUNITIES

$9500 IN PRIZES | DUE 9/22

TRAVEL AWARD

Vembu Subramanian Ocean Scholars Award

A total of $2,500 is available for this opportunity.

DATA CHALLENGE

Integrating Data to Understand a Coastal Ocean Event

There are two $3,500 prizes.

Today's plan

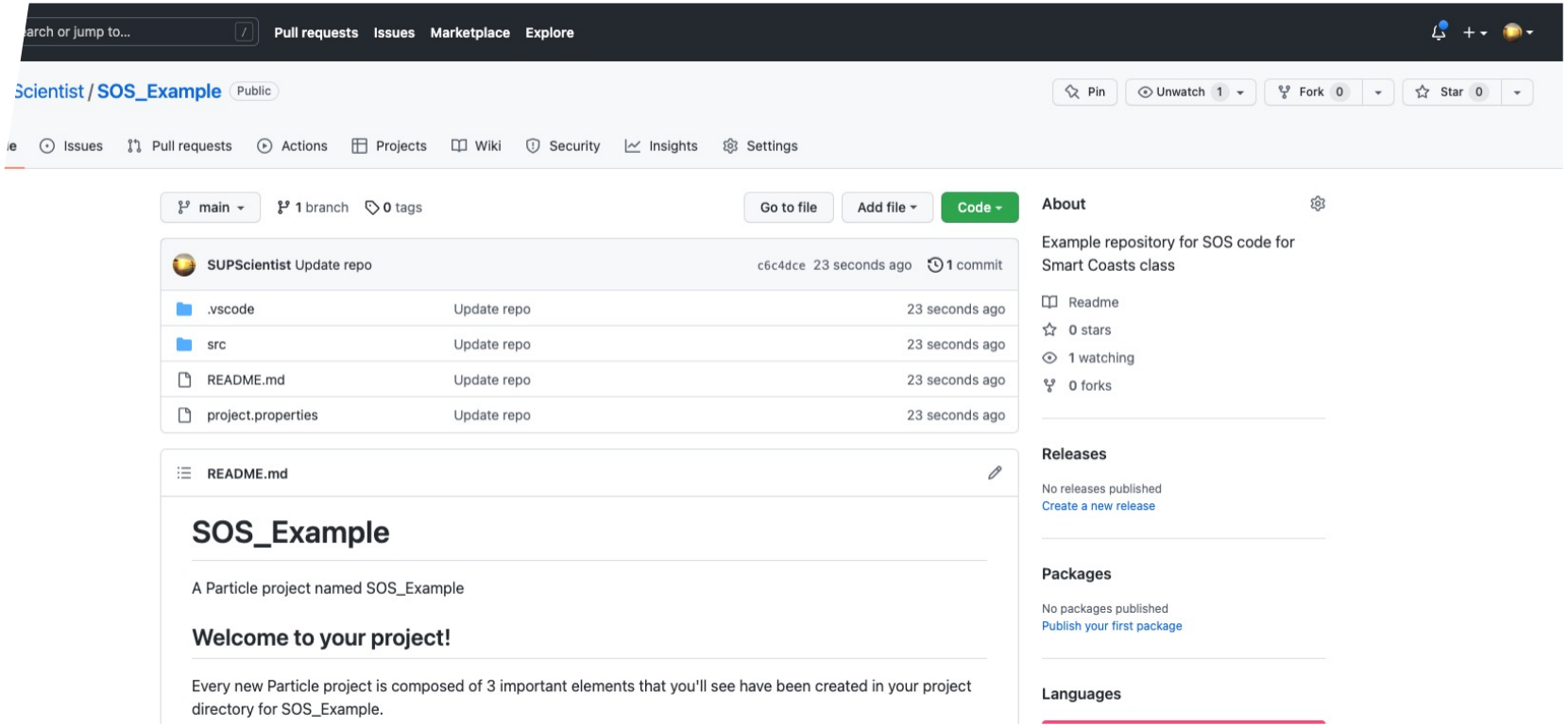
Lecture

Pick up where you left off with GitHub intro and

Complete second lab activity (building off first)

Homework (due Sep. 22) **Everyone**—not just 1 per group

- Canvas Assignment:
  - Send me link to your completed repository for the Intro to GitHub exercise from last week
  - Send me the link to your group's SOS code repository—see guidelines on next slide
- Canvas Discussion:
  - Post on Canvas Discussion thread on **two** projects of interest based on materials on class GitHub repo; we'll use these to form teams



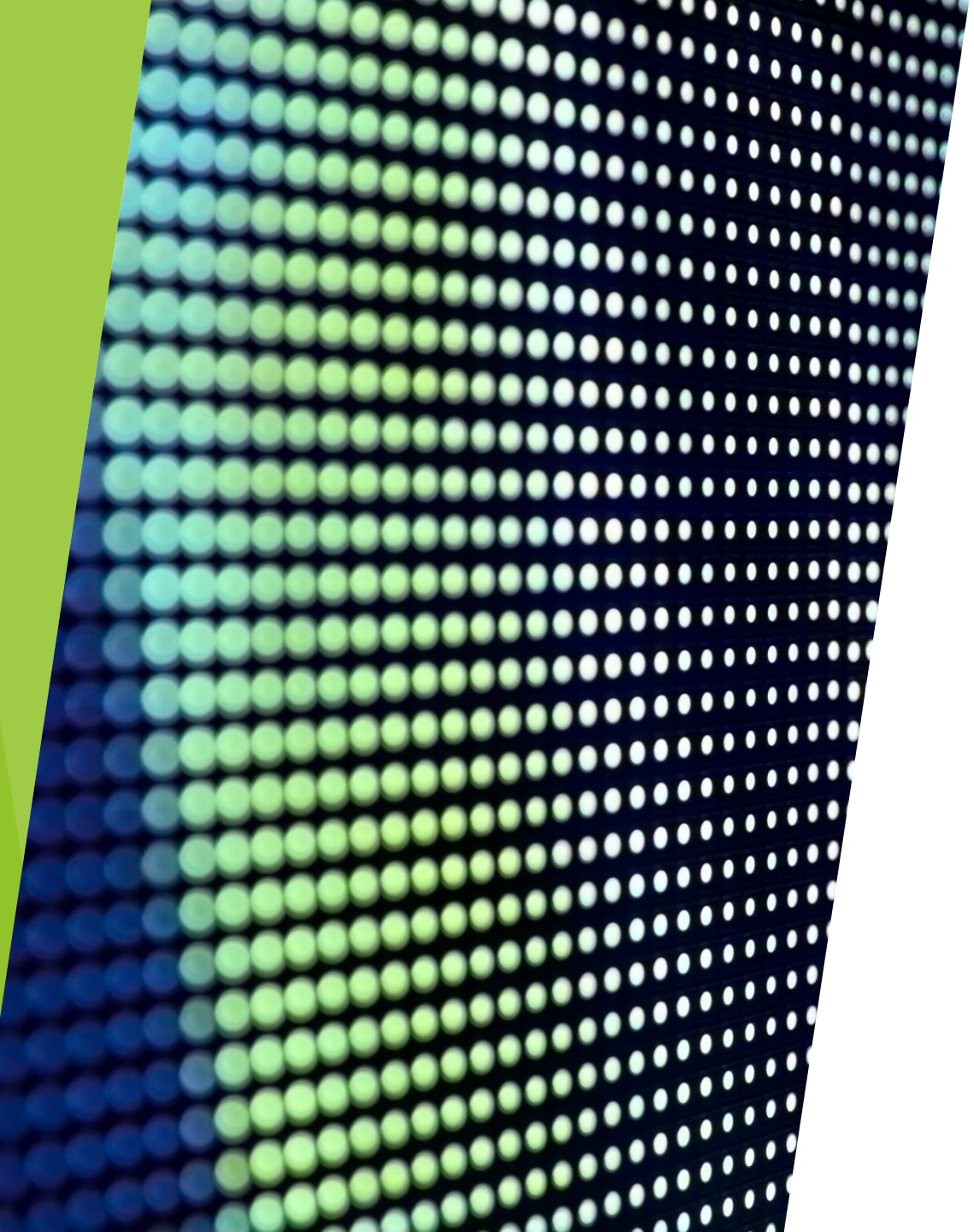
SOS code repository must look like close to this for credit:

Today’s topics

Working with Electronics 101

Electronics 101

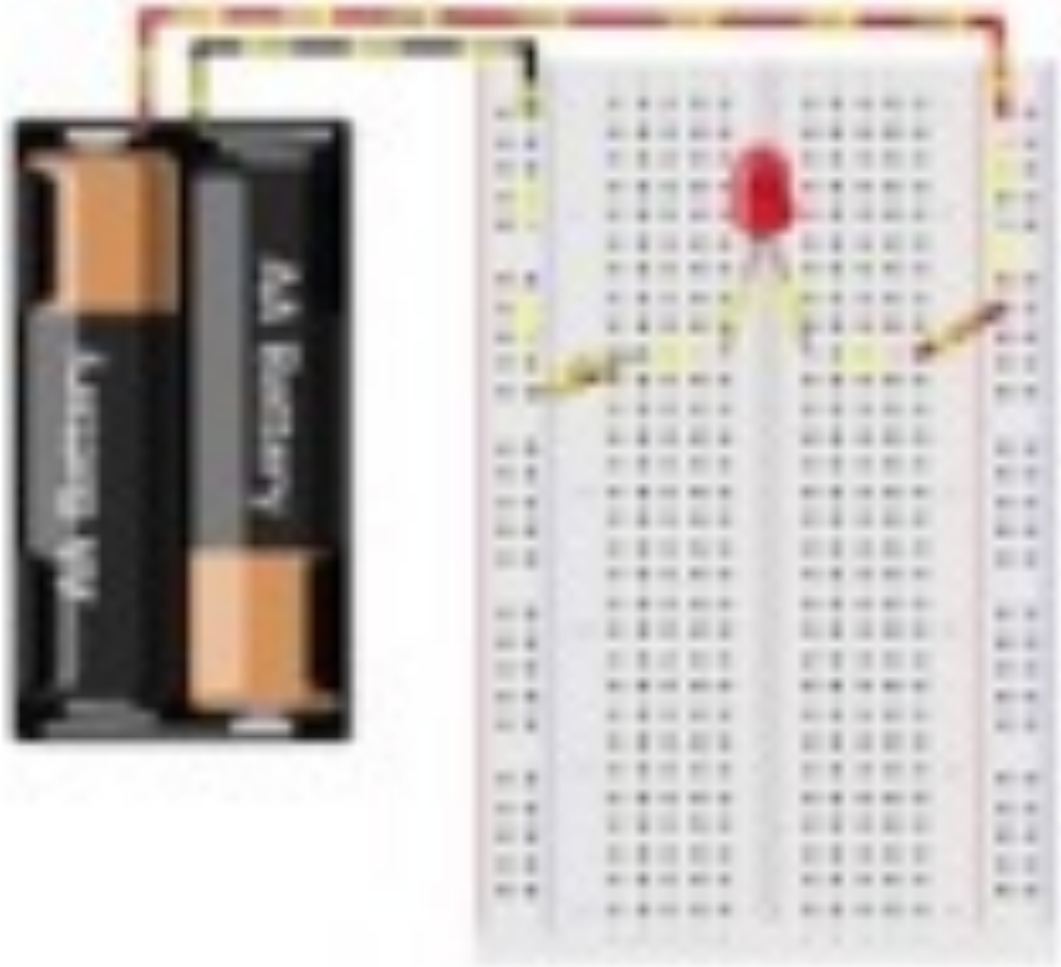
- Ohm's Law: V = IR
  - Watch https://www.khanacademy.org/science/physics/circuits-topic/circuits-resistance/v/circuits-part-1 for more if additional background needed
- Building circuits
  - Breadboarding circuits
  - Soldering wires and components
- Key electrical components
  - Power supply (battery)
  - Resistors
  - Capacitors
  - LEDs (often soldered onto boards, sometimes built separately into circuits)
  - Transistors: one of the most important inventions of the 20th century (Time Magazine)



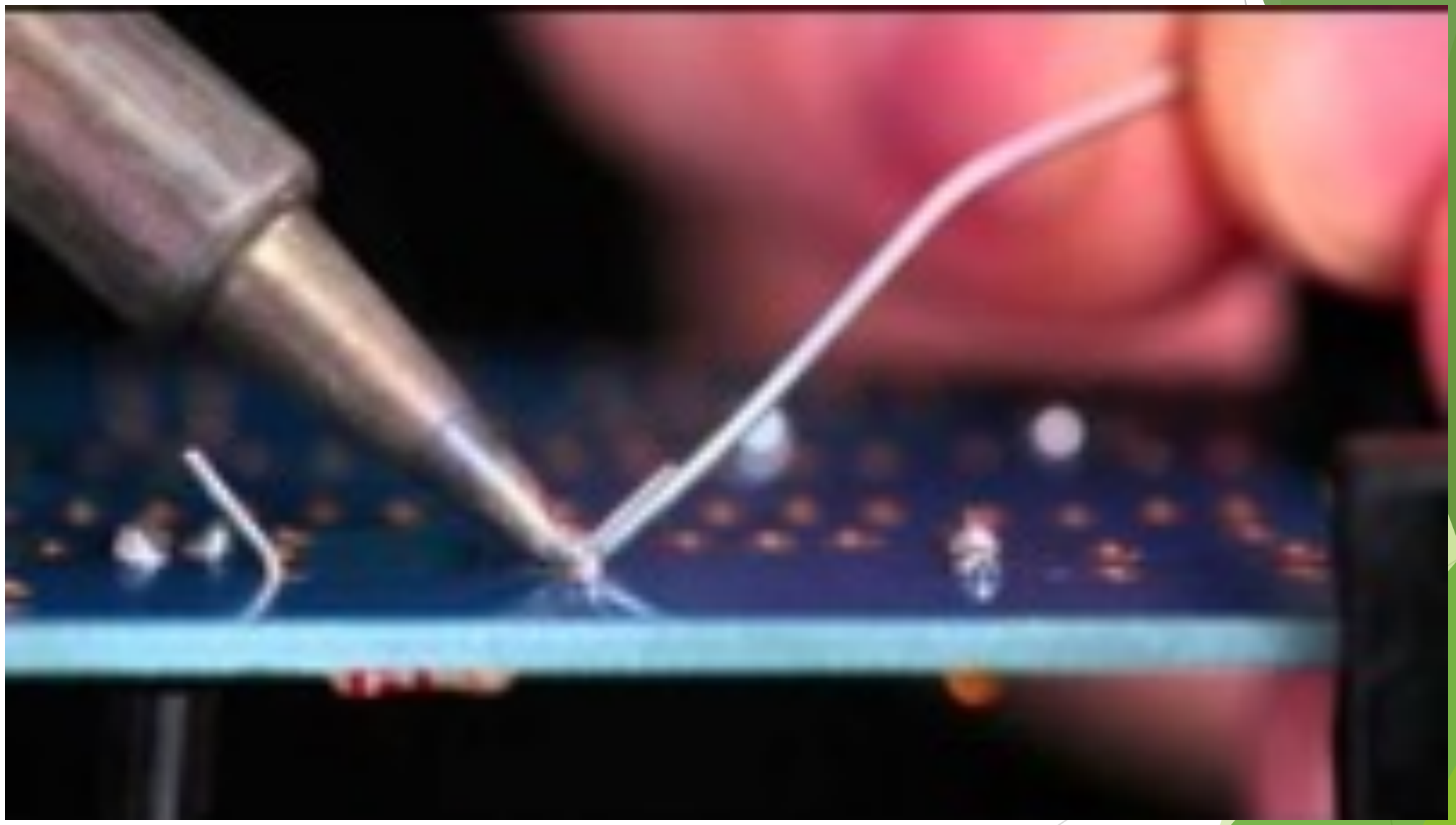
Next up:

Background and how-to videos

Part 1: How to use a breadboard



Part 2: Soldering



Part 3: Transistors (and way too much bass—sorry)

Today's lab

1. Finish last week's if you haven't
2. Send me links as described in assignment post on Canvas
3. Find GitHub repo for Eidam et al. paper
4. Sketch basic circuitry for Eidam et al. design
5. Find components for Eidam et al. design and breadboard