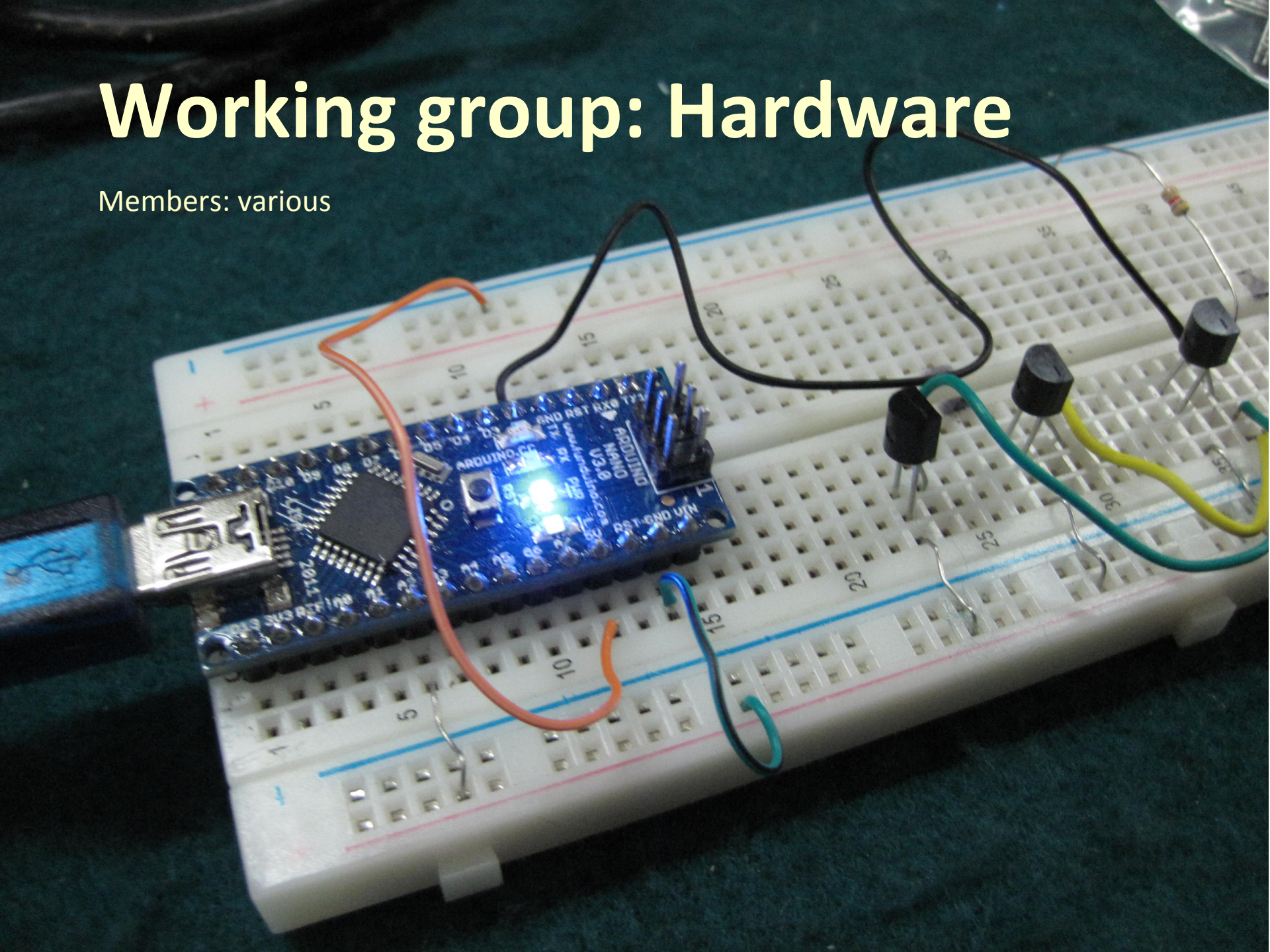
Working group: Hardware

Members: various



Our motivation…

Science can be expensive… = inaccessible to some

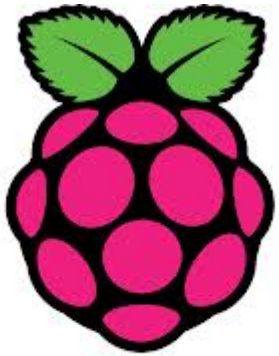
We want to build low-cost, open-source alternatives to many of the commercial sensors widely used within GLEON.

Compromises in accuracy (in order to lower cost), might enable novel research by allowing increased spatial coverage. At all scales!

Background…

Components used to manufacture many commercial sensors are inexpensive

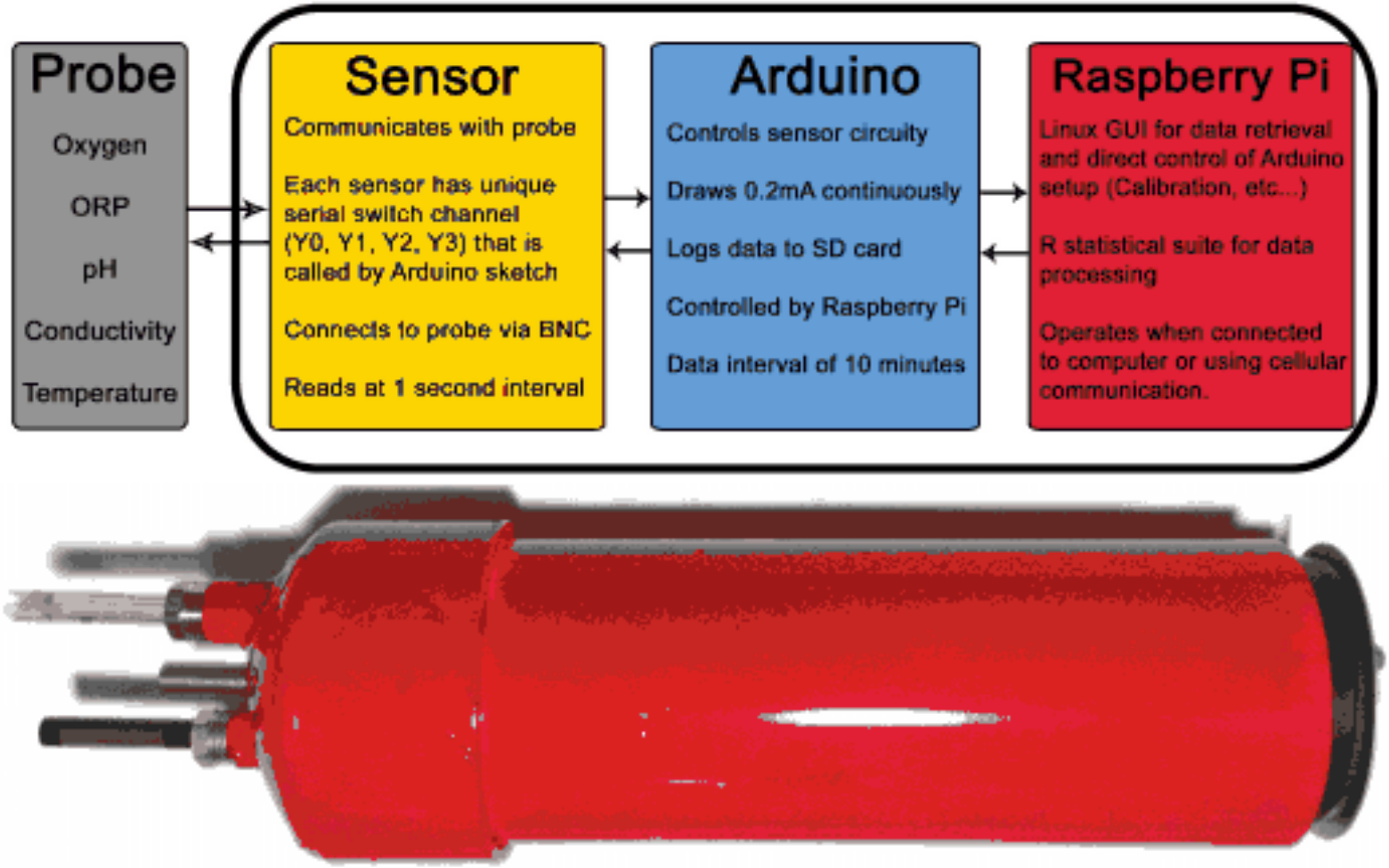
Open-source platforms with supportive user communities make things easier.



RaspberryPi

Examples of existing GLEON projects
Autosampler: Brian Read

Examples of existing GLEON projects
Cranberry DIY sonde: Ryan Schoeneman



Why op
- Publica
- Lower c
- Replace
- Constan

Progres

Dataloggin
- Conduc
- pH sens
- Comma
- Serial s

Pressure hu
- NPT 3/8
- Gasket

Acknow

Special tha
Steve Hasti
Brian Lutz
Kent State

Follow our p
[1]Department

Project ideas/wishlist

-Weather station
-Sonde
-Wave sensor
-Pressure sensors
-GPS tracking

-On-line instructions/wiki
-Modularity/interoperability

-Any requests??

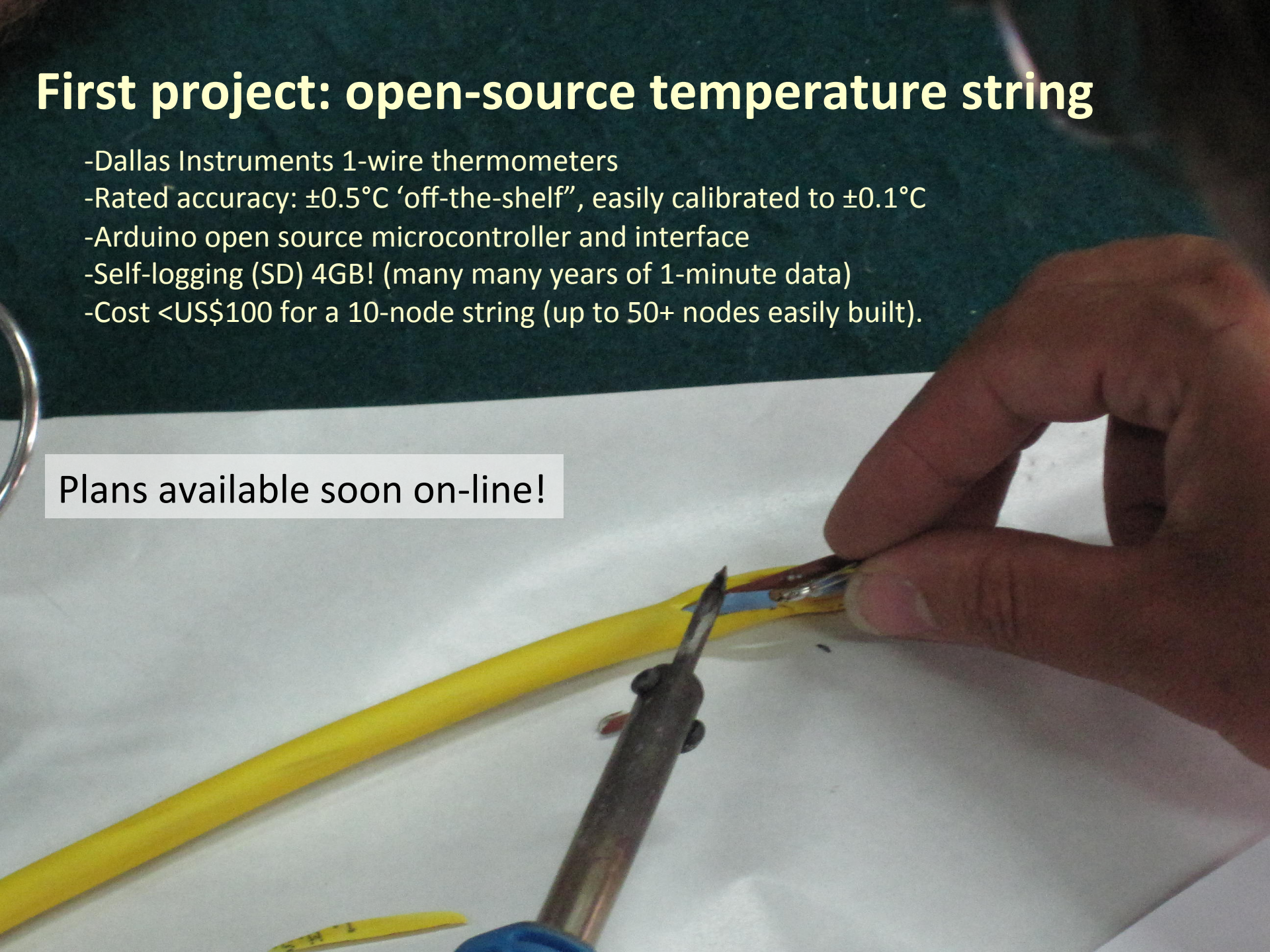
A complete buoy, WQ & met sensors, logging and telemetry.

<US$10K??

ALL OPEN-SOURCE!

First project: open-source temperature string

-Dallas Instruments 1-wire thermometers
-Rated accuracy: ±0.5°C 'off-the-shelf", easily calibrated to ±0.1°C
-Arduino open source microcontroller and interface
-Self-logging (SD) 4GB! (many many years of 1-minute data)
-Cost <US$100 for a 10-node string (up to 50+ nodes easily built).



Plans available soon on-line!

First project: open-source temperature string

-Dallas Instruments 1-wire thermometers
-Rated accuracy: ±0.5°C ‘off-the-shelf”, easily calibrated to ±0.1°C
-Arduino open source microcontroller and interface
-Self-logging (SD) 4GB! (many many years of 1-minute data)
-Cost <US$100 for a 10-node string (up to 50+ nodes easily built).

Plans available soon on-line!

Most importantly…
Thanks to Alejandro Vitale
..and all our hosts!!