



# Environmental Sample Processor Mission Scripting

5/22/14 Brent Roman [brent@mbari.org](mailto:brent@mbari.org)



# Mission Scripts and Phases

- Top Level Commands for a deployment
  - Often omitted for lab work
- Usually contains a mission method
  - Specifies the starting tube number
  - Optionally specifies Mission End Time
  - Contains any number of mission phases
    - Each having a start time
      - with optional trigger conditons
    - One or more protocols run per phase
  - The ESP sleeps between phases
    - Contextual sensors continue being polled



# Protocols

- Protocol scripts do the real work of microbiological assays
  - Many canned scripts available:
    - HAB = Harmful Algal Bloom
    - BAC = Bacterial Assay
    - LARV = Larval Assay
    - WCR = Whole Cell Archival
    - DA = Domoic Acid Assay
    - HABDA = combined HAB and DA assay
    - STX = Saxitoxin Assay
  - All have parameters you may modify to suit your needs
    - With default values so you needn't specify everything
  - You may also create new protocols using the existing protocols as a guide:
    - STX was created just last year as a variant of DA



# Example “3peat” QC Mission

```
mission startTube: 2, endTime: “6AM 12/18/12” do
```

```
  at "12:40:00 12/14/12" do  
    habda {noKill}  
  end
```

```
  at "12:40:00 12/15/12" do  
    habda {noKill}  
  end
```

```
  at "04:00:00 12/17/12" do  
    habda  
  end
```

```
end
```



# It's Ruby all the way down

- Commands, Missions, Scripts, Protocols, Configuration Files
  - All are written in version 1.8 of the Ruby scripting language
- *Learn a little Ruby*
  - \* Rote memorization fails when something goes wrong
    - Standard on Mac OS, easily installed everywhere else.
- A gentle tutorial:
  - <https://pine.fm/LearnToProgram/>
- The bible:
  - <http://pragprog.com/book/ruby/programming-ruby>
- More (free) choices to suit your learning style:
  - <http://ruby.about.com/od/tutorialsontheweb/tp/10waysfree.htm>

