One strategy to broaden participation in marine science is to entrain students at earlier stages of their education, e.g. 1st or 2nd year, community college. Challenge: This strategy is not always popular with mentors, who may feel that less experienced students require too much time and attention. What can the REU program do to supplement the independent research projects and foster success for less experienced students? Solutions: The REU program provides additional structure and training via program elements that target 3 areas (highlighted below):

### 1 – Basic Research Foundations

#### How to Read a Scientific Paper

**Aim:** To teach students how to use background material

We use an exercise adapted from UT Libraries that breaks an article into sections and has groups of students read the sections separately. Discussion helps to understand the parts of an article and how to extract relevant information. [https://blogs.lib.utexas.edu/utlis/2008/08/11/exercise-how-to-read-a-scientific-article/](https://blogs.lib.utexas.edu/utlis/2008/08/11/exercise-how-to-read-a-scientific-article/)

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<td>Final blog post</td>
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#### Research Proposal

**Aim:** To jump-start mentor-REU interaction, help students understand the why and how of their projects, and plan out. Each student works with their mentor(s) to produce a short (3 page) proposal describing their research:

- Background
- Hypotheses/questions
- Objectives
- Methods
- Expected results
- Project timeline

The experimental setup for video observations of damselfish schooling was by Laura Butman (REU 2015), during REUIRAME 2015.

### 2-Career Pathways & How to Navigate Them

#### Ethics Lunch (weekly)

**Aim:** To explore expectations, norms, and the culture of science

We meet over lunch once a week to discuss case studies. Students choose topic & lead discussion in wks 3-6.

* I would like to replace this with training in Unconscious Bias – if you have experience with this, please let me know*

#### Careers in Marine Science

**Aim:** To inform students about science careers outside of academia.

Panel members from:

- Marine education
- Non-profit foundation
- State government/agency
- Environmental consulting

Each member describes their background & the skills and qualifications needed in their field, and answer student questions.

Thank you to Lisa Rom for being such a great P.O., for our funding (NSF OCE 1358890) & to the students of REUISME 2016 for the images

### Cross-Program REU Meeting

**Aim:** Practice communicating with peers in a related field

We share a half-day trip to local bays on the R/V Katy with students from an EnvSci REU. In the afternoon, students present short descriptions of their work, including one drawing that encapsulates their project:

Scientific Presentations Workshop

**Aim:** Provide theory and tips on how to communicate effectively using PowerPoint etc. Presented by a faculty member who teaches a similar course for our grad students, includes time for student Q&A.

**Blog Posts**

**Aim:** Practice communicating to the public.

Students make 3 posts throughout the summer on the blog section of the program website [http://reu.utmsi.utexas.edu/studentblogposts](http://reu.utmsi.utexas.edu/studentblogposts)