<table>
<thead>
<tr>
<th><strong>Goal/Aim</strong></th>
<th>Our goal is to facilitate the use of the general concepts and research developed in this study to serve as educational lessons that address the Ocean Literacy Principles on the middle school and high school level.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>These research-based lessons will promote critical thinking and analytical skills through the comprehension of basic scientific principles, as well as meeting state standards in science and mathematics.</td>
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<tr>
<td><strong>Collaboration</strong></td>
<td>We will collaborate with STEM-CORE on a series of informal and formal activities for students, teachers, and the general public.</td>
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<tr>
<td><strong>Activities</strong></td>
<td>We plan to mentor and support a Project X alumnus as an education consultant to develop a data oriented lesson plan for National Marine Educators Associations’ (NMEA) Bridge website (<a href="http://www.vims.edu/bridge">www.vims.edu/bridge</a>). This website is the most broadly used web resource for K-12 educators looking for marine and coastal lesson plans and demonstrations. Educators who have completed the Project X program are experts in educating students in the geosciences, and are therefore ideal go-betweens to translate scientific research into concepts and lessons for students and the general public. As part of the presentation of this lesson plan on the Project X and Bridge websites, we also plan to serve as an online “scientist in residence” to answer questions and hold discussions with educators using the online materials. We also plan to serve a similar function for the Project X program as part of their teaching curriculum.</td>
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<tr>
<td><strong>Evaluation</strong></td>
<td></td>
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</tbody>
</table>
### Objective & Goals
The core educational objective of this proposal is to develop a 12th grade ocean science module for the Texas Department of Education that meets the science Standards for College and Career Readiness, the national Ocean Literacy Standards, and the NASA GLOBE project. A majority of the research data supporting this module will be coming from regional (South Texas) and global ocean observations (ARGO, NASA). The ultimate goal is to have the module incorporated into the 12th grade science curriculum and for the module to be disseminated nationally under the guidelines of NASA GLOBE.

### Rationale

### Collaboration
In addition, map visualizations that result from this project will be made available through a partnership with Texas State Aquarium in Corpus Christi which serves several Project X visitors per year. This is an aggressive educational objective that will require meaningful communication between NASA GLOBE, 12th grade Lubbock district science teachers, the PI and graduate students. Because of this need we are partnering with The Centers for Ocean Science Education to facilitate the educational objective.

### Activities

### Evaluation
We will work with the COSEE XXX evaluator to evaluate broader impacts
**Goals**
The overall goal of the education and outreach plan for the Project X effort will be to show the relevance and importance of science and the natural resources of the Rio Grand River and Estuary in the everyday lives of people living, working, and traveling in the watershed and beyond.

**Rationale**

**Collaboration**

**Activities**
- Design and create educational display about Project X with access to real-time data from website through a computer kiosk with a beacon/lighthouse theme or appearance.
- Develop a public interface to help interpret the data, putting data into context for the general public.
- Provide a linkage between the current water quality conditions and key practices individuals can do to make a difference for water quality.
- Provide additional information at these “Beacons” to further educate visitors about the local ecology.

**Evaluation**