

**NOAA Coastal Services Center
FY2007 Regional IOOS Development
Proposal Evaluation Form**

NOTE TO REVIEWER: Rate the application according to the **EVALUATION CRITERIA** and **RATING CLASSIFICATIONS** provided. Use this page to provide typed evaluation comments. Make sure that the application number appears on any additional page(s). **YOUR COMMENTS MAY BE FORWARDED TO THE APPLICANT.** If this occurs, your name will be removed from all documentation prior to mailing.

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If a digital signature is unavailable, please e-mail this form and fax a signed form to Mary Culver at (843) 740-1298 or (843) 740-1290.

Do not type your name on the front of this form; sign your name on the back of this form.

Proposal Number: P6_FA1_15

Proposal Title: Southern California Coastal Ocean Observing System (SCCOOS): Shelf to Shoreline Observatory Development

Principal Investigator: Eric Terrill

Institution: U California-San Diego

Please score and provide comments in the following five (5) categories;

- 1. Importance/relevance and applicability of proposal to the goals:** This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, federal, regional, state, or local activities. This criterion ascertains whether there is intrinsic value in the proposed work and relevance to NOAA's activities and objectives for developing the regional component of the IOOS. Proposals will be evaluated on how well the proposed project will achieve the specific goals of the focus area(s) identified in the funding announcement.

This is a proposal for focus area 1: RCOOS Development. The SCCOOS is a large, well structured organization that has expended about \$15,000,000 to date, and currently has NOAA and state support.

* The proposal primarily describes SCCOOS goals and objectives, current activities, and past achievements. SCCOOS goals and objectives are clearly relevant to the focus area goals, but do not specifically address the focus area goals. Only about a 1/2 page is devoted to describing tasks proposed for this funding, and those are a mixture of project continuations and expansions, and vague product development activities. The need for additional funding for these tasks is unclear.

Shortcomings are that:

1. proposed tasks are not defined in any detail, and clearly differentiated from those already funded;
2. specific products needed by stakeholders are not well defined;
3. the process for developing specific products is not well defined and;
4. processes for measuring success are not well defined.

- 2. Technical and scientific merit:** This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives. Questions relevant to this criterion include: Is the approach appropriate for the stated goals and objectives? Are the project goals and objectives achievable within the proposed time-frame? Do the proposed approaches incorporate current guidance, scientific, and/or technical advancements in the development of the Integrated Ocean Observing System? Does the proposal promote interoperability with other components of a regional and national ocean observing system?

The overall approach of SCCOOS to achieving its goals and objectives appears to be sound. This project proposes specific tasks that probably could be achieved in the timeframe, but details of the products to be developed are lacking. There is not consistent linkage between project tasks and project milestones. The approach incorporates scientific and technical advancements. Interoperability with other components is a clear goal.

- 3. Overall qualifications of applicant:** This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. Questions relevant to this criterion include: Does the proposal demonstrate regional and institutional support for the project? Are the investigators qualified and is the organizational framework appropriate to conduct a project of the nature and scope proposed? Are investigators from other agencies and institutions within the region included as key personnel on the project to capitalize on available expertise and promote a regional approach?

The proposal demonstrates regional and institutional support for the project. The scientists are capable of conducting the science. The organizational framework for data integration, product development, and information dissemination appears to be sound. Success measurement is undefined.

- 4. Project costs:** This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time-frame. Questions relevant to this criterion include: Does the proposal demonstrate that the budget is commensurate with project needs? Is the cost effectiveness of the project optimized through strategic partnerships with collaborating institutions, agencies, or private sector partners?

The budget is \$1,876,737 and partnership contributions are strong. Differentiation between funding needed and funding in place for the proposed tasks is unclear. The lack of linkage between project tasks, project milestones, and budgetary items (e.g., tuition remission and lab support) further obscures the relationship between the budget and project needs.

- 5. Outreach and education:** This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. Questions relevant to this criterion include: Does the proposed project demonstrate that the target user community has been fully engaged in development of the desired project outcomes? Does the proposal demonstrate that information generated by the project will reach its target audience and have a positive impact on the development of regional and national observing system infrastructure?

The target user community appears to have been fully engaged in development of the desired project outcomes. The SCCOOS organizational framework, goals, and objectives makes it likely that the

information generated by the project will reach its target audience and have a positive impact on the development of regional and national observing system infrastructure.

Scores

Proposal Score

1. Importance (max 30 pts.)	_____ 23 _____
2. Technical and Scientific merit (max 25 pts.)	_____ 22 _____
3. Qualifications (max 15 pts.)	_____ 12 _____
4. Project cost (max 15 pts.)	_____ 10 _____
5. Outreach and Education (max 15 pts.)	_____ 15 _____
TOTAL SCORE	_____ 82 _____

Please provide an overall rating for the proposal:

Excellent _____ Very good ~~_____~~ Good _____ Fair _____ Poor _____

Excellent: Probably will fall among the top 10% of proposals in the subfield; highest priority for support. This category should be used only for truly outstanding proposals.

Very Good: Probably will fall among the top 1/3 of proposals in the subfield; should be supported

Good: Probably will fall among the middle 1/3 of proposals in the subfield; worthy of support.

Fair: Probably will fall among the lowest 1/3 of proposals in the subfield; should not be supported without serious revision.

Poor: Proposal has serious deficiencies; should not be supported.

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Proposal Number: P-06_FA1_15

Proposal Title: Southern California Coastal Ocean Observing System (SCCOOS): Shelf to Shoreline Observatory Development

Principal Investigator: Eric Terrill

Institution: SCCOOS, Coastal Observing R&D Center, Scripps Institution of Oceanography

Please score and provide comments in the following five (5) categories;

- 1. Importance/relevance and applicability of proposal to the goals:** This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, federal, regional, state, or local activities. This criterion ascertains whether there is intrinsic value in the proposed work and relevance to NOAA's activities and objectives for developing the regional component of the IOOS. Proposals will be evaluated on how well the proposed project will achieve the specific goals of the focus area(s) identified in the funding announcement.

The work intends to continue development of the RCOOS. It does not provide new user-specified tools or closer integration of data delivery efforts. The work continues development activities that are taken place in many institutes though does not bring the efforts together in a coherent manner.

- 2. Technical and scientific merit:** This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives. Questions relevant to this criterion include: Is the approach appropriate for the stated goals and objectives? Are the project goals and objectives achievable within the proposed time-frame? Do the proposed approaches incorporate current guidance, scientific, and/or technical advancements in the development of the Integrated Ocean Observing System? Does the

proposal promote interoperability with other components of a regional and national ocean observing system?

The approach is not one that will lead to integrated development.

- 3. Overall qualifications of applicant:** This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. Questions relevant to this criterion include: Does the proposal demonstrate regional and institutional support for the project? Are the investigators qualified and is the organizational framework appropriate to conduct a project of the nature and scope proposed? Are investigators from other agencies and institutions within the region included as key personnel on the project to capitalize on available expertise and promote a regional approach?

The proposal applicants are well qualified, and the institutes back the proposed work.

- 4. Project costs:** This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time-frame. Questions relevant to this criterion include: Does the proposal demonstrate that the budget is commensurate with project needs? Is the cost effectiveness of the project optimized through strategic partnerships with collaborating institutions, agencies, or private sector partners?

The work leverages large state investment to establish a Coastal Ocean Currents Monitoring Program and the CALCOFI program.

I have strong reservations regarding the rapid reaction observations. It is not clear what will happen with this effort. Which unplanned event will be intensely observed? A substantial portion of the budget is set aside for this effort. There are no clearly defined tasks or deliverables. At the end of the project, what further development of the RCOOS will people be able to point to?

The budget is planned for one year of funding. It is not clear that progress can be made with such a funding profile.

Most of the task descriptions in Appendix A point to continued support for continued development. There is little clear definition of what will be proposed to occur and what will exist by the end of the project.

- 5. Outreach and education:** This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. Questions relevant to this criterion include: Does the proposed project demonstrate that the target user community has been fully engaged in development of the desired project outcomes? Does the proposal demonstrate that information generated by the project will reach its target audience and have a positive impact on the development of regional and national observing system infrastructure?

The proposal is cognizant of many local monitoring activities related to water quality, harmful algal blooms, oil spill and search and rescue. It is not clear if the proposed work will be actively engaged with this local use community.

Scores	Proposal Score
1. Importance (max 30 pts.)	15
2. Technical and Scientific merit (max 25 pts.)	10
3. Qualifications (max 15 pts.)	12
4. Project cost (max 15 pts.)	5
5. Outreach and Education (max 15 pts.)	10
 TOTAL SCORE	 52

Please provide an overall rating for the proposal:

Excellent _____ Very good _____ Good _____ ~~Fair **XX**~~ **Poor** _____

Excellent: Probably will fall among the top 10% of proposals in the subfield; highest priority for support. This category should be used only for truly outstanding proposals.
Very Good: Probably will fall among the top 1/3 of proposals in the subfield; should be supported
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Do not type your name on the front of this form; sign your name on the back of this form.

Proposal Number: P-06

Proposal Title: Southern California Coastal Ocean Observing System (SCCOOS): *Shelf to Shoreline Observatory Development*

Principal Investigator: Eric Terrill

Institution: Joint Institute for Marine Observations (JIMO); Scripps Institution of Oceanography

Please score and provide comments in the following five (5) categories:

- 1. Importance/relevance and applicability of proposal to the goals:** This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, federal, regional, state, or local activities. This criterion ascertains whether there is intrinsic value in the proposed work and relevance to NOAA's activities and objectives for developing the regional component of the IOOS. Proposals will be evaluated on how well the proposed project will achieve the specific goals of the focus area(s) identified in the funding announcement.

I rate the Importance category as Excellent. The SCCOOS team has developed a strong governance and management structure. The State of California has initiated a commitment to observations in the coastal ocean. The geographic area covered by the SCCOOS is highly populated, and the citizens have a high rate of use and concern about the beaches and coastal ocean. Water quality and waste water discharge provide additional incentive for a comprehensive observational program. There is some scientific cooperation between the west coast OOS elements which is not clear from the proposal.

- 2. Technical and scientific merit:** This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives. Questions relevant to this criterion include: Is the approach appropriate for the stated goals and objectives? Are the project goals and objectives achievable within the proposed time-frame? Do the proposed approaches incorporate current guidance, scientific, and/or

technical advancements in the development of the Integrated Ocean Observing System? Does the proposal promote interoperability with other components of a regional and national ocean observing system?

I rate the Technical and Scientific category as Excellent. The team has proposed an excellent collection of observational elements. They have only demonstrated in the proposal a preliminary effort to integrate the observations of one part of the team with the other parts. As the SCCOOS goes forward in time, these connections will have to be encouraged and be shown to be growing.

- 3. Overall qualifications of applicant:** This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. Questions relevant to this criterion include: Does the proposal demonstrate regional and institutional support for the project? Are the investigators qualified and is the organizational framework appropriate to conduct a project of the nature and scope proposed? Are investigators from other agencies and institutions within the region included as key personnel on the project to capitalize on available expertise and promote a regional approach?

I rate the Qualifications category as Excellent. The team is large and has a strong mixture of senior and junior scientists in the team. Some of the CV's may need to update the publications lists, but most of the scientists have demonstrated their publication records well.

- 4. Project costs:** This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time-frame. Questions relevant to this criterion include: Does the proposal demonstrate that the budget is commensurate with project needs? Is the cost effectiveness of the project optimized through strategic partnerships with collaborating institutions, agencies, or private sector partners?

I rate the Costs category as Very Good. The team is proposing to use the funding appropriately, and has stressed the cooperation among many southern California institutions.

- 5. Outreach and education:** This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. Questions relevant to this criterion include: Does the proposed project demonstrate that the target user community has been fully engaged in development of the desired project outcomes? Does the proposal demonstrate that information generated by the project will reach its target audience and have a positive impact on the development of regional and national observing system infrastructure?

I rate the Outreach and Education category as Very Good. The only specific reference to education in the Proposal narrative is in the Table, and mentions expanding 5th grade education initiatives. The additional information in the Appendix E did help somewhat expand and clarify the activities.

Scores	Proposal Score
1. Importance (max 30 pts.)	_____28_____
2. Technical and Scientific merit (max 25 pts.)	_____23_____
3. Qualifications (max 15 pts.)	_____15_____

4. Project cost (max 15 pts.)	_____12_____
5. Outreach and Education (max 15 pts.)	_____12_____
TOTAL SCORE	_____90_____

Please provide an overall rating for the proposal:

Excellent X Very good _____ Good _____ Fair _____ Poor _____

Excellent: Probably will fall among the top 10% of proposals in the subfield; highest priority for support. This category should be used only for truly outstanding proposals.

Very Good: Probably will fall among the top 1/3 of proposals in the subfield; should be supported

Good: Probably will fall among the middle 1/3 of proposals in the subfield; worthy of support.

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Poor: Proposal has serious deficiencies; should not be supported.

I detected some indecision about whether this is a full "OOS" proposal, or a specific project. Since the number of observing programs is fairly extensive, this should be a full "OOS." The "APPROACH" Section is less than a page, and the "Outreach" Element only appears in the Milestones Table (p 13). That seemed short and rushed to me. I recommend funding of this proposal, but they should have done a much better job of writing it.

**NOAA Coastal Services Center
FY2007 Regional IOOS Development
Proposal Evaluation Form**

Proposal Number: P-06 FA1-15 (#1)

Proposal Title: Southern California Coastal Ocean Observing System (SCCOOS): Shelf to Shoreline Observatory Development

Principal Investigator: Eric Terrill (\$1,876,737; 1 yr)

Institution: Scripps

Please score and provide comments in the following five (5) categories;

- 1. Importance/relevance and applicability of proposal to the goals:** Proposals will be evaluated on how well the proposed project will achieve the specific goals of the focus area(s) identified in the funding announcement.

Goals are to support value added activities that will provide data and information for improved decision making (mitigation of oil spills, SAR, beach closures) and long-term assessments of climate on fisheries and efficacy of management decisions.

Most funding will be used for observations (current velocity, winds, waves, surf zone currents, DO, chlorophyll fluorescence, and turbidity as described in appendix E); modeling (ROMS); and data management from SCCOOS observations as well as the collation and integration of data from the greater SCCOOS user community. There is an education component that targets graduate students at MLML and 5th graders through a nonprofit.

SCCOOS will (1) focus on documenting changes in fish habitat (nutrients, phytoplankton production, hydrography, circulation) with data on egg and fish larvae provided by CalCOFI (+ inshore extension of CalCOFI funded by this proposal); (2) near-real time products (current and wave fields) for water quality, SAR, oil spill response, HABs and marine operations (although it states under BENEFITS that SCCOOS will integrate ongoing beach surveys, this is not addressed in the APPROACH section or in appendices A and E); (3) rapid responses to unplanned events (e.g., Huntington Beach demonstrations project on nearshore transport, provided the city of LA with data needed to assess the impact of a planned discharge event).

- Integrate regional assets; contribute data & information to address regional priorities

In addition to data provided by academic research institutions in the region (including CalCOFI), the SCCOOS DMAC effort integrates data from City, County and State agencies and from NPDES permit holders on water quality. Blended surface chlorophyll products will also be provided using data from multiple satellite sensors. These are strengths of the proposal.

However, in situ and remote sensing appear to be analyzed separately for the provision of different products. This is a weakness.

- Contribute ocean meteorological & oceanographic data to complement existing data streams

Three new oceanographic moorings (near surface meteorological data, current profiles, T-S, DO, chlorophyll fluorescence, turbidity + pCO₂ at one and nutrients on another), gliders (T-S, chl-F, turbidity) and powered AUVs (glider sensors + DO, bioluminescence, optical properties)(sections out to 500 m with 3 km resolution), extension of CalCOFI quarterly surveys inshore (to 30 m isobath), and 5 shore-based high resolution time series of T-S, and water level + a limited number of sites for Chl-F and turbidity (limited number ???).

Drifters will also be deployed to validate HF radar estimates of surface current fields and to measure sub-grid scales of motion that are not resolved by HF radar or modeled current fields. Does the USCG deploy drifters to validate their models used for Search and Rescue? If so, this would be good way to engage them.

- Provide broad access to data

“SCCOOS data and analysis are evolving towards publication through a data management system in as close to real time as is practical.” Information provided in Appendices A and E support this claim. This is a strength.

- Develop products that meet needs of specified users within the region

The Senior Advisory Committee consists of potential users from state and federal agencies, but it is not clear that they specify products and services that are used to guide the development of SCCOOS. There are list of government agencies that presumably will benefit from SCCOOS activities (Section C, p. 5-10 and Section E, p. 12), but these are just lists. With the exception of SCCWRP, all participating institutions are academic. There is one letter of support from a user and data provider (City of LA, Environmental Monitoring Division), but that’s it. In short, there is little or no evidence that data products have been developed to meet the needs of specified users within the region. This is a major weakness.

- Contribute to overall development of IOOS through participation in IOOS planning & implementation at regional & national levels

This is hard to judge based on the proposal. The PIs obviously contribute to IOOS development within their region.

2. Technical and scientific merit: This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives. Questions relevant to this criterion include:

- Is the approach appropriate for the stated goals and objectives?

Three targeted areas are outlined in section C (Regional climate time series, near real time . AUDIENCE: THE SOCIETAL DRIVERS FOR SCCOOS. This sets the stage quite nicely. However, section D. APPROACH, the work statement in appendix A, and the more detailed description of activities in appendix E do not map to these three targeted areas. Many of the work statements come across as being independent research projects which make the proposal seem like a grab bag of disconnected activities that are not clearly related to the operational delivery of products that will be used by specified user

groups. It would have made the evaluation of this proposal much easier (and objective) if the activities to be funded through this proposal were organized according to the three targeted areas.

Important aspects of the proposed work are the emphasis on near shore observations and modeling; the linkage between nearshore, inner shelf of offshore circulation; and management and analysis HF radar data. In regard to the latter, I'm surprised that the proposal does not mention the National HF radar data management facility at Scripps.

It is not clear from the proposal, how much of the wind data that will assimilated come from measurements over water on the continental shelf. Increasing the density of such measurements is important (for increasing the skill of both regional marine weather forecasts and model based nowcasts and forecasts of current and wave fields), and it is not clear to what extent the proposed work will address this undersampling problem.

- Are the project goals and objectives achievable within the proposed time-frame?

Of the 5 bullets under A. GOALS AND OBJECTIVES (p. 3), the first 2 should be funded by their RA development grant. Although the section on "Tasks proposed for this proposal" (p. 10) is concerned primarily with the last 3 bullets, there is a level of vagueness here that is a bit unsettling.

The goals and objectives stated in section A are very general compared to the program one can piece together from sections D and E and appendices A and E. This, and the challenge of mapping the work statement to goals and objectives, make it difficult to determine exactly what will be accomplished during the 1 year duration of this project in terms of the delivery of products and services needed to "provide resource managers...with science-based...products and decision support tools"; "contribute to the development of national IOOS..."; and "Develop, evaluate, and optimize products...".

There is no mention of performance metrics.

- Do the proposed approaches incorporate current guidance, scientific, and/or technical advancements in the development of the Integrated Ocean Observing System?

Yes. The proposal addresses 4 categories of IOOS development that have been identified by Ocean.US as critical to the establishment of an integrated system: (1) integration of existing data streams, (2) increasing the resolution of observations, (3) interdisciplinary modeling, and (2) DMAC. In particular, it follows DMAC guidelines and will deliver quality controlled data consistent with QARTOD.

- Does the proposal promote interoperability with other components of a regional and national ocean observing system?

Yes. In addition to data provided by participating academic institutions, the SCCOOS DMAC effort integrates data from City, County and State agencies and from NPDES permit holders on water quality. This is a strength of the proposal.

3. Overall qualifications of applicant: This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. Questions relevant to this criterion include:

- Does the proposal demonstrate regional and institutional support for the project?

Only by virtue of the participation of PIs from academic institutions throughout the region.

- Are the investigators qualified and is the organizational framework appropriate to conduct a project of the nature and scope proposed?

The investigators are well established experts in the fields needed to achieve the proposed work plans. Although a high level description of the governance of the RA are given, important details on how the project will be managed and coordinated to achieve specific user needs for data and information are lacking.

- Are investigators from other agencies and institutions within the region included as key personnel on the project to capitalize on available expertise and promote a regional approach?

Investigators from a diversity of academic institutions within the region are engaged and a regional approach will be promoted to the extent that PI home institutions represent the region well. On the down side, all of the PIs are academics.

- 4. Project costs:** This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time-frame. Questions relevant to this criterion include:

- Does the proposal demonstrate that the budget is commensurate with project needs?

This would be much easier to evaluate if the budgets for the work statements mapped to the project budget. For example, the budget for Keith Stolzenbach's piece on "Shelf to Shoreline Observatory Development" is \$195,692. If you look at the line items for Stolzenbach in the budget summary (in the required budget narrative) there is \$32K for Ecosystems and \$110K for ocean moorings. JPL has a data management-modeling-remote sensing piece with a price tag of \$113K which is nowhere to be found in the required budget narrative.... Go figure!

The budgets for each of the Statements of Work are well thought out and appropriate. However, if "project needs" means "goals and objectives" as articulated in this proposal, who can say.

- Is the cost effectiveness of the project optimized through strategic partnerships with collaborating institutions, agencies, or private sector partners?

The proposal leverages several monitoring programs in the region funded from other sources, e.g., CA's investment of \$21M for HF radar, remote sensing, AUV surveys, 17 wave stations maintained by CDIP, etc. This is a strength of the proposal.

- 5. Outreach and education:** This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. Questions relevant to this criterion include:

There is an education component that targets graduate students at MLML and 5th graders through a nonprofit. COSEE is listed in the PROJECT MILESTONE Table, but the role of this COSEE site is not addressed.

- Does the proposed project demonstrate that the target user community has been fully engaged in development of the desired project outcomes?

No, it does not. There is not a clear linkage between user-specific products and services and the data and information to be delivered as described in the work statement. Many of the work statements come across as being independent research projects which also make the proposal seem like a grab bag of disconnected activities. The gaps between the GOALS AND OBJECTIVES and the APPROACH section in the required project narrative and between the latter and the work statement exacerbate this perception and gives the appearance that the primary users are scientists. Scientists are clearly important users, but it would be a big plus if the user base was a bit broader. There is only one letter of support from a user outside the scientific community (City of LA).

- Does the proposal demonstrate that information generated by the project will reach its target audience and have a positive impact on the development of regional and national observing system infrastructure?

Data dissemination and access are emphasized (the “push” side of the equation) but it is not clear that user-specified information will reach target audiences (in terms of the “pull” side of the equation).

Scores

Proposal Score

1. Importance (max 30 pts.)	_____23/28_____
2. Technical and Scientific merit (max 25 pts.)	_____17/23_____
3. Qualifications (max 15 pts.)	_____15/15_____
4. Project cost (max 15 pts.)	_____10/12_____
5. Outreach and Education (max 15 pts.)	_____5/12_____
TOTAL SCORE	_____70/90_____

Please provide an overall rating for the proposal:

Excellent _____ Very good/Good X Good _____ Fair _____ Poor _____

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