

Leverage, Leverage, Leverage (Logically Engaging Virtually Every Real Alliance, Group and Entity)

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Idea in a Nutshell: Leverage, Leverage, Leverage

Facilitate CoPe establishment, implementation and long-term success by building in elements, throughout every aspect of CoPe, to leverage and optimally use existing assets and resources.

Recommendation

This is an overall recommendation for the structure of CoPe, its hubs, and projects within and across those hubs. This recommendation applies regardless of the configuration of CoPe, the hub structure, and the research focus.

CoPe should focus on grand challenges related to coastline and people in an interdisciplinary and coordinated way with a focus on providing long-term continuous and sustained funding for research that addresses these grand challenges. *The recommendation is for CoPe to pursue this while ensuring that for every aspect of CoPe, existing assets and resources (e.g, federal, state or local programs; management or program structures; networks; extension and outreach initiatives; etc.) are leveraged and optimally used.* This is important for facilitating the establishment, implementation and long-term success of CoPe. In order to do this, CoPe will provide a structure that includes access to an inclusive and expansive network of assets and resources that could be leveraged, as well as resources (human, financial, educational) to facilitate connections and leveraging. CoPe will put in place a Chief Leveraging Officer (CLO) who is dedicated to building a network of assets and resources and to ensuring that they are leveraged effectively. The CLO will be responsible for managing CoPe resources in support of leveraging.

Organizationally, there are several ways that the CLO could be positioned.

- Within a CoPe administrative center,
- Within NSF program management office, or
- Co-located at a CoPe hub;
- Located at a CLO's home institution.

With any of these organizational arrangements, the CLO will be the center of a virtual hub of connected individuals across the country and will be responsible for creating a virtual network that is as inclusive and expansive as possible.

Background and Rationale

As a new initiative, CoPe must address questions regarding its unique value proposition and contributions, and specifically how it fits with existing programs, how it supports other organizations and programs, and how it can effectively address the key issues of coastlines and people. Once the idea of CoPe is approved, CoPe will face a steep implementation curve; the design and structure of CoPe should minimize implementation costs and time. Given the long-term nature of issues related to coastlines and people that CoPe must address, it is critical to also build in elements that ensure the long-term sustainability of CoPe. Leveraging existing assets and resources such as those associated with federal agencies and programs, regional partnerships and networks, statewide collaborations, professional organizations, the philanthropic community, academic institutions, and communities.

In order to be most effective, the leveraging effort should consider a range of options for the most appropriate type/types of extant entities to engage. Examples include:

- **Management structures:** The National Oceanographic Partnership Program (NOPP), established under federal law, provides the mechanisms for US government agencies to co-fund projects and provide comprehensive program oversight.
- There are many existing mission agency programs that span both management and operational functions. These programs should be engaged as appropriate, including, for example, the NOAA's Office of Coastal Management, NSF's Ocean Observatories Initiative, and USGS's Coastal Change Hazards Program.
- **Functional organizations:** There are many types of operational structures that efficiently conduct specific activities: e.g. the Integrated Ocean Observing System (including its 11 regional associations), the National Estuarine Research Reserves, and the National Estuaries Program.
- **Geographic entities:** Many entities exist to ensure coordination around issues that are geographically specific. Examples: The National Sea Grant College Program in each of 32 state-specific programs, the Regional Integrated Sciences and Assessments Program, and the Gulf of Mexico Research Initiative and associated programs.
- **Engagement structures:** Outreach and engagement are important aspects of CoPe, and might best be handled using existing structures such as the National Sea Grant College Program, the network of aquariums, and the National Association of Marine Laboratories.
- **Operational Concepts:** While not entities, per se, there are some concepts for management and operations that could be leveraged as well: the high risk/high payoff management concepts at the Defense Advanced Research Projects Agency (DARPA) and the Advanced Research Projects Agency-Energy (ARPA-E) are two good examples.
- **Networking structures:** Already-built organizations with an established track record of performance in bringing together seemingly diverse communities offer a valuable resource to exploit. The Government-University-Industry Research Roundtable (GUIRR) of the National Academies of Science, Engineering and Medicine has worked well, as have a full gamut of professional societies.
- **Advocacy mechanisms:** An important aspect of CoPe success will be the independent validation of the value of the program to decision makers and

policy developers. This role is effectively conducted by a range of Non-Governmental Organizations (NGOs) such as The Nature Conservancy and Surfrider Foundation, as well as individual industries/industry consortia, and private benefactors (e.g. Schmidt Ocean Institute, Paul Allen Foundation). In considering the value/viability of these existing entities, another important aspect will be to address the gap analysis of what structures and mechanisms DO need to be created *ab initio*. That is, no new management or operational structures should be established until a deliberative effort concludes that either there is no “leverageable” asset or resource, or the cost/effort to engage one is too high.

Impact and Value

One of the main purposes of leveraging is to avoid duplication of efforts and to seek complementarity. There are already numerous efforts to gather data or engage in research and/or outreach to address coastal issues. An emphasis on leveraging allows CoPe to identify the gaps that exist and determine how CoPe is uniquely positioned to address the gaps. As a result, CoPe (and its hubs and projects) will have a unique value proposition. Leveraging would also allow CoPe to maximize the value of its funding to target areas and topics where there are clear gaps and resources are needed.

Leveraging encourages interdisciplinary research by incentivizing participation of individuals from across different networks and with different access to resources. Many researchers are not aware of, or connected with, some of the above organizations. They may not be aware that data is available, or they may not be aware of networks for education and outreach. Through networking and leveraging, CoPe teams could focus on topics within their area of expertise and draw upon external resources to expand the resources available to them and the reach of their work.

Leveraging also supports CoPe in efforts at broadening participation. Through use of existing resources and assets, particularly those with educational focus, CoPe activities could reach a wider range of under-represented populations. For example, a CoPe project could leverage existing educational programs targeted at minority-serving institutions to access resources for student internships or undergraduate research opportunities.

Given the need to ensure that CoPe provides societally-meaningful and impactful products, leveraging is also important to access practitioners, decision makers, and residents. For example, CoPe projects could leverage the Sea Grant network to access coastal communities that are relevant to the project. Using a specific example, CoPe projects that deal with coastal flooding and impacts in southeast Virginia (i.e., Hampton Roads), can ensure relevance and engagement with planners, managers, and policy makers by leveraging the Hampton Roads Adaptation Forum (co-organized by Virginia Sea Grant, Old Dominion University and the Hampton Roads Planning District Commission).

In terms of implementation, leveraging existing assets and resources will also save time and effort, allowing for a quicker start in the development of CoPe and its hubs. Hubs will not be expected to do everything or provide resources that already exist. Instead, they will serve as a resource to connect researchers with existing resources and to each other.

This recommendation is not without risks. For example, the leveraged activity can be subverted. In some cases, the CoPe project seeking to leverage may instead be the one being leveraged. Similarly, leveraging may cause mission creep or scope

creep for the CoPe project as a result of trying to find alignment with the agency or program being leveraged. Forced duplication may also be a concern of leveraging, where the CoPe project, because of the leveraging, duplicates existing efforts rather than being innovative or providing unique value. Furthermore, the search for partners or programs to be leveraged can also be time consuming, and in some cases the efforts to leverage could have been better invested in actual task completion.

In recognition of these risks, the CoPe structure will establish mechanisms and structures to manage the leveraging process. These include the sharing of best practices for leveraging and partnering, establishing an inclusive and expansive network, building and maintaining strong relationships, regularly assessing leveraging efforts and results, and developing a structure that helps projects connect with appropriate assets and resources to be leveraged.