

Team #27: Fara Courtney, Harriet Morgan, Davin Holen, Chris Maio

Recommendation: ***Hubs should incorporate multiple boundary-spanning functions***

The operation of CoPe Hubs will benefit from creating infrastructure to support communications, co-production of knowledge, relationship building and resource leveraging on a number of levels. This infrastructure might be in the form of specific “boundary-spanner” personnel or organization within the Hub itself or through compensated partnership with a local organization well-positioned to carry out this function. In proposing the following boundary-spanning functions, we are assuming that the overall structure of Hubs will be regional, encompassing a specific geography:

**Boundary-Spanning Function 1:** *User- or community-inspired research.* Research questions should be informed by local knowledge in a collaborate manner with the appropriate local stakeholders and/or decision makers. The Hubs need the capacity to understand the local political and cultural landscape in order to engage the right communities in research and identify local champions who can facilitate collaboration, lend credibility to project and ensure local buy-in. Effective local connection can also lead to unexpected benefits like the leveraging of equipment, volunteers and information that can save time and money, and ensure the wide usability of research results. Creating connections with local K-12 education systems and/or other youth programs enhances the education and training mission of NSF, while simultaneously engaging local and regional youth. The person or organization that serves this boundary-spanning role for a Hub will be a two-way conduit for information, and an advocate for the community perspective and priorities.

**Boundary-Spanning Function 2:** *Understand the context of existing coast-and-people-focused agencies and organizations.* There are many ongoing initiatives within federal programs, state and local government programs and regional NGOs already working on issues related to the NSF CoPe mission. The research agenda developed for the Hubs should be fully-informed by an in-depth understanding of the current ongoing initiatives, and seek to leverage, partner with, support, integrate and/or differentiate Hub activities from these programs. This should occur from the onset, in the establishment of the Hub’s research program, and be an ongoing function that builds relationships and generates innovative collaborative opportunities on an on-going basis.

**Boundary-Spanning Function 3:** *Connect research to industry.* Industry is an integral part of a local and regional community, but brings different needs, perspectives and potential resources to research which will not be captured without targeted outreach and engagement. Maritime industry is a potential customer for research products (e.g., weather forecasts, data instrumentation, resource characterization, etc.); technology developers are a potential source of innovative methods for data collection or development of analytic instruments. Impacts on business operations from climate-related disruptions are important data points to consider when looking at investing in mitigation options. Close contact with regional industry sectors and leads will provide insight into industry concerns that could

benefit from collaborative research, leveraging new sources of funding, and the potential for industry-generated data sources.

**Boundary-Spanning Function 4:** *Connect research across disciplines.*

Multidisciplinary efforts require supporting infrastructure, institutions and investment to ensure effective collaboration that spans disciplinary boundaries. If a cross-disciplinary approach is to be a central feature of the Hubs, this must be required as a condition of funding, although this alone will not be sufficient to support true interdisciplinary innovation. Hubs should invest in convening and relationship building within the relevant communities and local stakeholders; opportunities for face-to-face interaction around particular topics of interest can facilitate translational science and provides a platform for stakeholders and local decision-makers to provide input into the structure of research questions. The Hubs should also provide opportunities for graduate students engaged in Hub-sponsored research to be fully immersed in the multi-disciplinary aspects of the problems they are seeking to solve, encouraged to understand the broader context within which their particular expertise if being applied.

**Boundary-Spanning Function 5:** *Connect across CoPe Hubs.* The overall CoPe program structure should require communication across the regional Hub personnel. Through communication Hubs will have opportunity to share best practices, engage in cross-regional problem solving and jointly guide the development of the national program.

The aforementioned five boundary spanning functions are proposed as central organizational principles of the CoPe Hubs. Through spanning local and regional agency boundaries, the Hubs will be able to engage in knowledge co-production with local communities and stakeholders and will also be able to leverage the existing network of coast-and-people-focused agencies and organizations throughout each Hub's regional location. Furthermore, by investing in convening and relationship building with local communities the Hub's research questions will be multidisciplinary in nature and will reflect community interests. Finally, by facilitating knowledge transfer between regional Hub locations, best practices and lessons learned will be shared at the national level.