Ocean-Shot Submission Template

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Title of Ocean-Shot Concept: An Ocean Corps for Ocean Science

Abstract (200 word limit): Motivated by the example of the Peace Corps, we propose "An Ocean Corps for Ocean Science" as a unifying concept for inspiring sustained, long-term education and research collaborations between scientists from under-resourced nations and scientists from the US and other higher-resourced nations. Based upon our own experience with the Coastal Ocean Environment Summer School in Ghana (coessing.org), we expect that an Ocean Corps would draw large numbers of early- and mid-career scientists into its ranks, thus "internationalizing" their outlook, molding many of them into champions for international capacity development for the remainder of their careers, and fostering true ocean science collaborations between higher-resourced and under-resourced nations. The Ocean Corps concept has wide appeal. The lead author, a former Peace Corps volunteer, received support and input on this document from several early-career scientists in the US [Alexis Valauri-Orton (program manager, The Ocean Foundation), Maddie Foster-Martinez (postdoc, U-New Orleans), Winn Johnson (assistant professor, U-North Carolina Wilmington), Paige Martin (postdoc, Columbia), Katherine Roche (graduate student, U-Rhode Island, and former Peace Corps volunteer), Tashiana Osborne (PhD student, Scripps), and Osinachi Ajoku (postdoc, NCAR)], as well as two scientists from under-resourced nations [Edem Mahu (lecturer, U-Ghana), and Marcia Ford (environmental data manager, U-West Indies)].

Relevant Ocean Decade Challenge(s):

Challenge 4: Generate knowledge, support innovation, and develop solutions for equitable and sustainable development of the ocean economy under changing environmental, social and climate conditions.

Challenge 7: Ensure a sustainable ocean observing system across all ocean basins that delivers accessible, timely, and actionable data and information to all users.

Challenge 9: Ensure comprehensive capacity development and equitable access to data, information, knowledge and technology across all aspects of ocean science and for all stakeholders.

Challenge 10: Ensure that the multiple values and services of the ocean for human wellbeing, culture, and sustainable development are widely understood, and identify and overcome barriers to behaviour change required for a step change in humanity's relationship with the ocean.

Vision and potential transformative impact (200 word limit):

An "Ocean Corps for Ocean Science" would provide a structure for connecting scientists in under-resourced regions, who wish to host capacity development activities, with scientists in higher-resourced regions, who wish to join such activities. An Ocean Corps would create a sustained, long-term network of summer schools, workshops, and other collaborative endeavors across the globe. Our Ghana school provides an example of how growth can take place. Dozens of US scientists, many of whom had never before been to Africa, have joined us in Ghana, and have quickly become passionate advocates of capacity development. A large NSF proposal led by Howard University, to develop better weather measurements in West Africa, will, if funded, use our school as a project meeting place. A large NSF proposal led by Lamont Doherty would add new fields and new techniques (paleoceanographic coring) to the Ghana school. Growth begets more growth; with proper funding in place, an Ocean Corps would quickly grow to cover many countries and oceanographic fields. Finally, an Ocean Corps could also involve under-served communities within the US; for example, the Howard proposal noted above would recruit students from under-served groups, and we have brought an undergraduate from another HBCU to Ghana.

Realizable, with connections to existing U.S. scientific infrastructure, technology development, and public-private partnerships (150 word limit):

The Ghana summer school, which has been run for one week every August since 2015, proves the realizability of the Ocean Corps concept. With a funded Ocean Corps in place, many partnerships between scientists in higher-resourced and under-resourced nations could be built. The Ghana school could be used as an example for similar ventures, but each partnership would be free to develop the size, curriculum, goals, duration, and structures best suited for their own needs. The main infrastructure that the Ocean Corps idea taps into is the substantial human infrastructure of US Ocean Science, in the form of ocean scientists who are eager to develop collaborations in under-resourced areas abroad (more below). Technology development is another part of our vision—in 2020, as with other educational institutions, the Ghana school was run online, using Zoom, and we have learned much about how to transition to hybrid in-person/online models in the future.

Scientific/technological sectors engaged outside of traditional ocean sciences (100 word limit):

The main “non-traditional” vein that an Ocean Corps would tap into is a widespread “I want to help” spirit, particularly among early-career scientists, after a summer of reckoning about the lack of diversity in US and global power structures, including science. The lead author and collaborators have recently given Zoom talks on the Ghana school at several US oceanographic institutions. After every talk, several more US scientists ask to “join the cause”. Both Jamaicans and Nigerians have expressed a desire to host similar events. Everyone can see that such an undertaking is necessary; interest is clearly building.

Opportunities for international participation and collaboration (100 word limit): International participation and collaboration is a central goal of Ocean Corps. We aim to develop a sustained, long-term network of summer schools, sandwich degree programs, workshops, and other collaborative endeavors, all connected by a common vision of the greater good for ocean science. At our Ghana school, for example, hundreds of West Africans, ranging from university undergraduates to faculty and including some private and government sector employees, from Ghana, Nigeria, and several other countries, and dozens of US citizens, ranging from undergraduates to faculty and research scientists, have attended. Collaboration between scientists of under-resourced nations will also be encouraged.

Builds global capacity and encourages the development of the next generation of ocean scientists (100 word limit): An Ocean Corps for Ocean Science would build capacity, on a global scale, through education and research collaborations between scientists in highly-resourced and under-resourced nations. The education would be two-way. Scientists in under-resourced nations will develop collaborators from higher-resourced nations. Scientists from higher-resourced nations benefit because performing ocean science in multicultural, under-resourced environments “internationalizes” their outlook, providing them with an invaluable perspective. Early-career US scientists involved in our Ghana school say that the school has also provided them with uncommonly valuable leadership opportunities, for instance, in the areas of curriculum development, organization, and networking.