

## Future Directions in Bioluminescence Research

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### ABSTRACT

#### Naval Oceanography: The Role and Process for Transitions

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The role of the Oceanographer of the Navy is "...to plan, coordinate and implement the responsibilities of the Chief of Naval Operations with regard to Naval Oceanography". Naval Oceanography includes: oceanography, meteorology, geospatial information and services and precise time and astrometry.

Over the years Naval Oceanography has adjusted to the missions at hand. During the Cold War when the emphasis was on blue water anti-submarine warfare (ASW) and deterrence, Naval Oceanography concentrated on basin and mesoscale physical oceanography and acoustics. By comparison, during the Gulf War, when the emphasis was on strike support and low intensity conflict, Naval Oceanography concentrated on small-scale physical oceanography, meteorology and non-acoustics.

In the future missions will be asymmetric (mine warfare/mine countermeasures), time critical (precision strike), littoral (sea-based; mine warfare/mine countermeasures), and resource-optimized (autonomous; "just in time" logistics). As a consequence future R&D will need to be:

1. operationally-based,
2. product-line oriented and
3. have priorities defined by "established" criteria which are keyed to anticipated METOC-relevant drivers such as S&T, missions, organization, etc.

These criteria include:

1. the importance of the product to the warfighter,
2. innovation and improvement over current capabilities,
3. the odds of producing the product at cost and on time
4. alternative sources of R&D that can be used to leverage the investment, and
5. the possibility of having multiple capabilities which address other mission domains

In order to successfully transition a product to the fleet it is critical to have a defined receiver with an established means of "buy-in". There must be clear objectives, deliverables and exit criteria and there must be active exchange and feed back between the receiver and the producer from inception through to final delivery.

The ultimate challenge is to produce products that can provide knowledge that can be delivered anywhere, anytime, regardless of bandwidth that will provide a fully integrated, seamless representation of the battlespace environment and that can be used in simulation based training, acquisition and mission planning.

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