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Extending Ocean Drilling Pursuits [eODP]: Making Scientific Ocean Drilling Data Accessible Through Searchable Databases

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Scientific ocean drilling through the International Ocean Discovery Program (IODP) and its predecessors, has a far-reaching legacy. They have produced vast quantities of marine data, the results of which have revolutionized many geoscience subdisciplines. Meta-analytical studies from these efforts exist for micropaleontology, paleoclimate, and marine sedimentation, and several outstanding resources have curated and made available elements of offshore drilling data (e.g., Neptune), but much of the data remain heterogeneous and dispersed. Each study, therefore, requires reassembling a synthesis of data from numerous sources; a slow, difficult process that limits reproducibility and slows the progress of hypothesis testing and generation. A computer programmatically-accessible repository of scientific ocean drilling data that spans the globe will allow for large-scale marine sedimentary geology and micropaleontologic studies and may help stimulate major advances in these fields.

The eODP project, funded through the NSF's EarthCube program, seeks to facilitate access to, and visualization of, these large microfossil and stratigraphic datasets. To achieve these goals, eODP will be linking and enhancing the existing database structures of the Paleobiology Database (PBDB) and Macrostrat. This project is targeting shipboard drilling-derived data, but the infrastructure will be put in place to allow the addition of data generated post-cruise. eODP will accomplish the following goals: (1) enable construction of sediment-grounded and flexible age models in an environment that encompasses the deep-sea and outcrops; (2) expand existing lithology and age model construction approaches in this integrated offshore-onshore stratigraphically-focused environment; (3) adapt key microfossil data into the PBDB data model; (4) develop new API-driven web user interfaces for easily discovering and acquiring data; and (5) establish user working groups for community input and feedback. The success of eODP hinges upon interaction, feedback, and contribution of the scientific ocean drilling community, and we invite anyone interested in participating in this project to join the eODP team.