

## **Paleoproxy database development for the validation of tracer simulation in a model of the last glacial maximum**

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### **Abstract:**

A fundamental challenge in reconstructing ocean circulation during the last glacial maximum lies in reconciling conflicting proxy evidence for changes in North Atlantic Deep Water (NADW) flux. In this proposal we request funds to allow an undergraduate student to create a data base of global paleocirculation proxy data that will be utilized to achieve the following goals:

1. evaluate the accuracy of reproducing observed tracer distributions (or rather ventilation rates and pathways as deduced from paleoproxies) in a model of the ocean during the last glacial maximum; and
2. use a recently developed theory of ‘transit-time distributions’ of an ocean water-parcel to evaluate the probability that variations in a proxy record at a given location can be attributed to changes in the flux of NADW.