



## **Pliocene Intensification of Northern Hemisphere Glaciation**

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Seasonal cooling and changes in moisture supply at boreal high latitudes have both been proposed as major triggers of northern hemisphere glaciation (NHG) during the mid-Pliocene. Much of our uncertainty regarding their relative roles can be directed at a lack of high-resolution unambiguous records of temperature and ice volume for this phase of Cenozoic climate deterioration. With the aim of developing a more complete picture of NHG we are developing new high-resolution (sub-orbital) records of the abundance of ice-rafted-debris and stable isotopes ( $\delta^{18}\text{O}$ ,  $\delta^{13}\text{C}$ ) and Mg/Ca in benthic and planktic foraminiferal calcite from IODP Site 1308 between 2.59 and 2.50 Ma (MIS 103-99), during the late phase of the onset of NHG.

This will enable us to evaluate palaeoclimate variability in surface and deep waters within the North Atlantic IRD belt during the pronounced obliquity-paced Pliocene intensification of NHG, to estimate the contribution of global and regional ice growth versus North Atlantic seasonal cooling and assess the stability of IRD and stable isotope records in these sediments at millennial time-scales.