Orangeburg Scarp

East Coast, US: Satellite image of Orangeburg Scarp; visible by soil color variation

Recent field documentation of scarp; Peeles Chapel Rd, N of Laurel Hill, NC

Topographic profile; NE of Laurel Hill, NC
Estimates of the peak position of sea level during the Pliocene have a wide range:

(a) **Orangeburg Scarp**, +35 ± 18m (Dowsett and Cronin 1990)

(b) **Enewetak Atoll**, +20 to 25m (Wardlaw and Quinn 1991)

(c) **Atlantic Coastal Plain**, +25 to 35m (Krantz 1991)

(d) **LR04 oxygen isotope stack**, +3°C (see Raymo et al. 2009)

(e) **Sites 925 and 926**, +15 to 30m (Dwyer and Chandler 2009)

(f) **Wanganui Basin NZ**, +10 to 30m (Naish and Wilson 2009)
PRISM4 Program

1. Stratigraphically focused proxy-fusion reconstructions targeting particular regions (tropics, mid-to-high latitude North Atlantic) and dynamic processes (upwelling) identified by PlioMIP results; emphasis on variability.


Boundary condition changes GIS Ridge

The ridge was lower during Pliocene than it is today.
Results show increase in NCW production and Arctic warming
Sill depth experiment

Pliocene Ocean Temp Anomaly, Greenland–Iceland–Scotland Sill, 15W (Sill Exp–Std Plio)

Temperature (°C)

USGS

Bennett Lecture

Robinson, Valdes, Haywood & Dowsett (in review)
### GMU Students

<table>
<thead>
<tr>
<th>Former (and Current) GMU</th>
<th>Graduate Schools</th>
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<tbody>
<tr>
<td>Danielle Stoll</td>
<td>Alaska Pacific University</td>
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<tr>
<td>Jean Self-Trail</td>
<td>University of Nebraska</td>
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<tr>
<td>Kevin Foley</td>
<td>George Mason University</td>
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<td>Stephanie Strother</td>
<td>Northumbria University</td>
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<td>Naseem Naghdi</td>
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<td>Gina Valvo</td>
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<td>Jodi Deprizio</td>
<td>George Mason University</td>
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<tr>
<td>Kristen Mickulesku</td>
<td>San Francisco State</td>
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<tr>
<td>Rocio Caballero-Gill</td>
<td>Brown University</td>
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<tr>
<td>Marci Robinson</td>
<td>George Mason University</td>
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<td>Lorrin Massengill</td>
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Undergraduate Research Projects, MSc Theses, PhD Dissertations, Post Docs.
PRISM4: Time slice work (KM5.3) = order of magnitude increase in stratigraphic resolution, inclusion of proxy fusion approach to address data model discord in Piacenzian upwelling zones, tropics and North Atlantic.

PlioMIP (Phase 2): Experiments designed to explore mechanisms, magnitude and variability of Pliocene warming. [TBA at EGU]

PDIP (Paleoclimate Data Integration Project): Fusion of multiple proxies from marine and terrestrial environments at varying chronologies to provide nuanced reconstructions for those regions/dynamic processes where data-model discord exists. [Yorktown]
Chronology

G21/G20  [3.025 Ma]
M2/M1   [3.264 Ma]
240,000 yrs
Arctica islandica composite