

# 'Geological constraints for Antarctic ice sheet models: what do we have and what do we need?'

Workshop at Lamont-Doherty Earth Observatory, April 13-15 2011

## PROGRAMME

*Wednesday April 13*

Welcome	Joerg Schaefer	09:10
Introduction and aims of the workshop	Greg Balco	09:15

### **Terrestrial chronologies**      (*chair: Joerg Schaefer*)

Greg Balco	Introduction to the surface exposure dating method	09:30
John Stone	Deglaciation chronology of various sites in East and West Antarctica	09:45
Perry Spector	Holocene Deglaciation of the Ross Sea Embayment	10:30

BREAK 10:45

Gordon Bromley	Revisiting the deglacial history of Reedy Glacier, southern Transantarctic Mountains	11:00
Robert Ackert	Gauging WAIS elevations prior to the last highstand: Utilizing cosmogenic nuclides in supraglacial debris and bedrock in interior West Antarctica	11:15
Jo Johnson	The post-LGM thinning history of Pine Island Glacier, and some results from the N and W Antarctic Peninsula	11:45

LUNCH 12:15

Greg Balco	Results from the northeast Antarctic Peninsula, no results from the Pensacola Mountains, and some ideas about relating exposure ages to glaciological observations	13:15
Jorge Strelin	Glacier stratigraphy in the northern tip of Antarctic Peninsula	13:45
Mike Kaplan	Pleistocene East Antarctic Ice Sheet History as Recorded in Chronology and Sediment Provenance of High-elevation TAM Moraines	14:15

DISCUSSION/BREAK 14:30

### **Marine geology and chronology**      (*chair: Gordon Bromley*)

Eugene Domack	Future targets for marine and terrestrial geochronology in the Antarctic and refinement of radiocarbon dating methods and interpretation of marine sequences	15:15
Frank Nitsche	Evidence of paleo ice dynamic from the continental shelf morphology in the Amundsen Sea	15:45
C-D Hillenbrand	Post-LGM ice-sheet retreat from the West Antarctic shelf in the Bellingshausen and Amundsen seas: Current knowledge and open questions	16:15

DISCUSSION 16:45

### **New developments**

Joerg Schaefer/Irene Schimmelpfennig	Cosmogenic in-situ <sup>14</sup> C at LDEO and the new <sup>14</sup> C/ <sup>10</sup> Be tool	17:00
Tom Guilderson	Applications of <sup>14</sup> C-Geochronology to Antarctic Marine Sediments: Complications and (or?) Opportunities	17:15

Wrap-up 17:30

*Evening*      *Dinner in Lamont Hall*      19:00  
*(Pre-dinner drinks from 18:00)*

Thursday April 14

Summary of Wednesday 09:15

**The wider context** (chair: Mike Kaplan)

Rob Briggs Use of observations to constrain a large ensemble glacial systems model analysis for Antarctic deglaciation 09:30

Erik Ivins Geodetic Data for Constraining Present- Day and Holocene Antarctic Mass Dynamics 10:00

Claus-Dieter Hillenbrand Did the West Antarctic Ice Sheet collapse during the middle-late Pleistocene? 10:30

DISCUSSION/BREAK 11:00

Elizabeth Pierce Antarctica's Climatic History from Isotopic Sedimentary Provenance Studies of Marine Sediments 11:30

Robin Bell/Kirsty Tinto Change in West Antarctica from a geophysical view 12:00

LUNCH 12:30

Seth Campbell Ice-penetrating radar investigation of glacier structure and dynamics near exposure-dating sites in the Pensacola Mountains 13:30

Tim Creyts Implications of subglacial water in West Antarctica 14:00

Doug Martinson Dramatically warming water adjacent to western Antarctica 14:30

DISCUSSION/BREAK 14:45

DISCUSSION GROUPS (format tba) 15:15

Wrap-up and dinner logistics 17:15

Evening Dinner at Sidewalk Bistro, Piermont 18:15

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Friday April 15

Summary of Thursday, and aims for today 09:30

Group 1 leader report and time for discussion 09:45

Group 2 leader report and time for discussion 10:15

Group 3 leader report and time for discussion 10:45

BREAK 11:15

Wrap-up and planning 11:30

End of workshop and LUNCH 12:30