

RABID

Drilling to the bed of Rutford Ice Stream, West Antarctica, 2004/05



Andy Smith, BAS*

Keith Nicholls, BAS

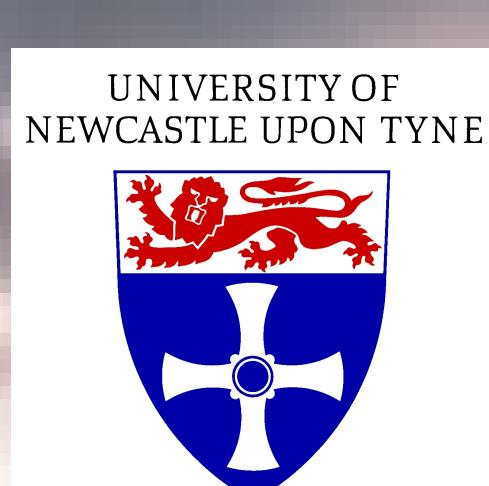
Tavi Murray, Leeds

Keith Makinson, BAS

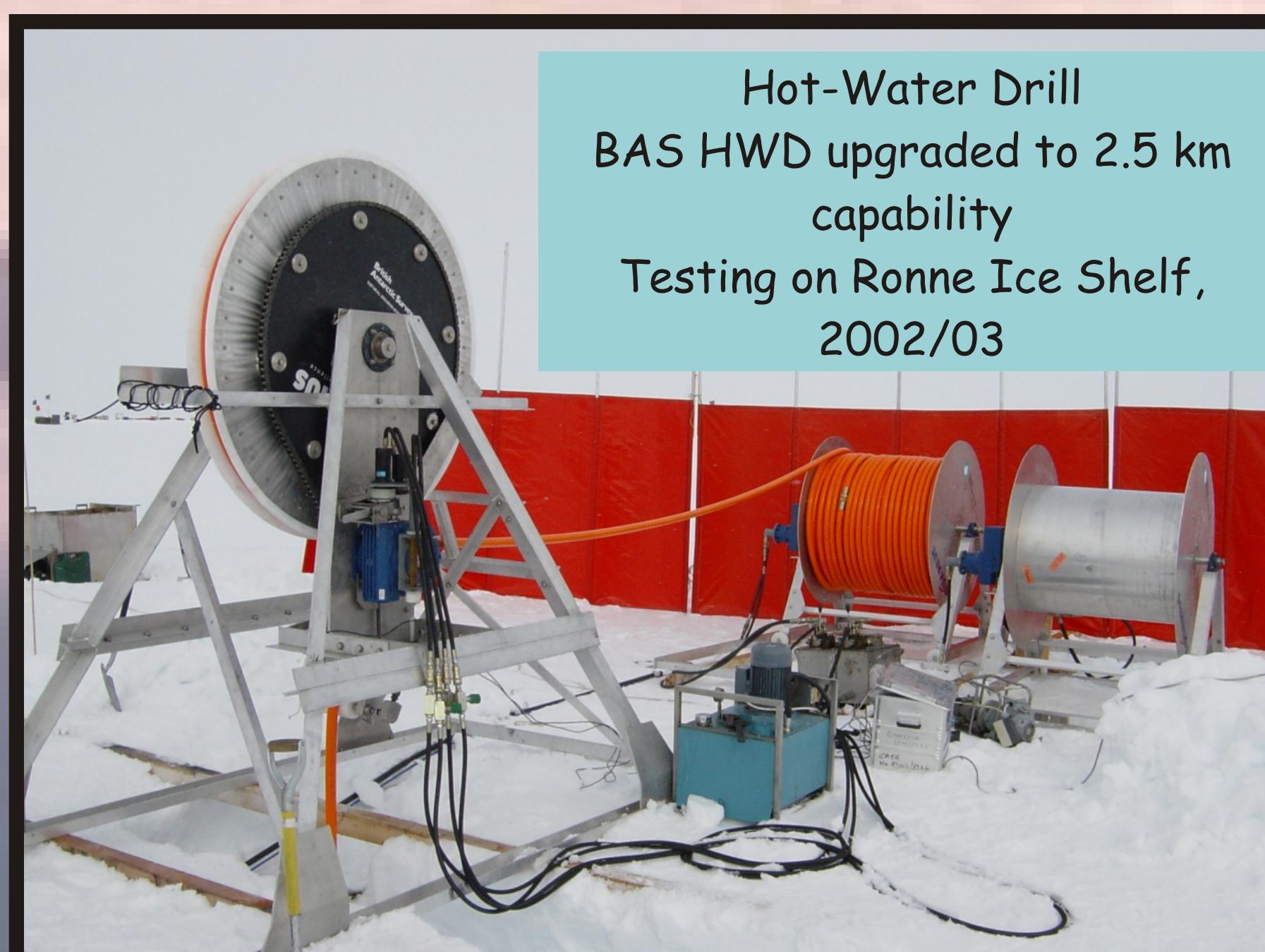
Guðfinna Aðalgeirsdóttir, Leeds

Alberto Behar, NASA-JPL

Matt King, Newcastle



RABID - AIMS
West Antarctic Ice Sheet history
Ice stream basal conditions
Ice stream dynamics



RABID - BOREHOLE METHODS

Hot-water drill - 2.5 km capability
- 1 MW power

Sediment coring (gravity corer)

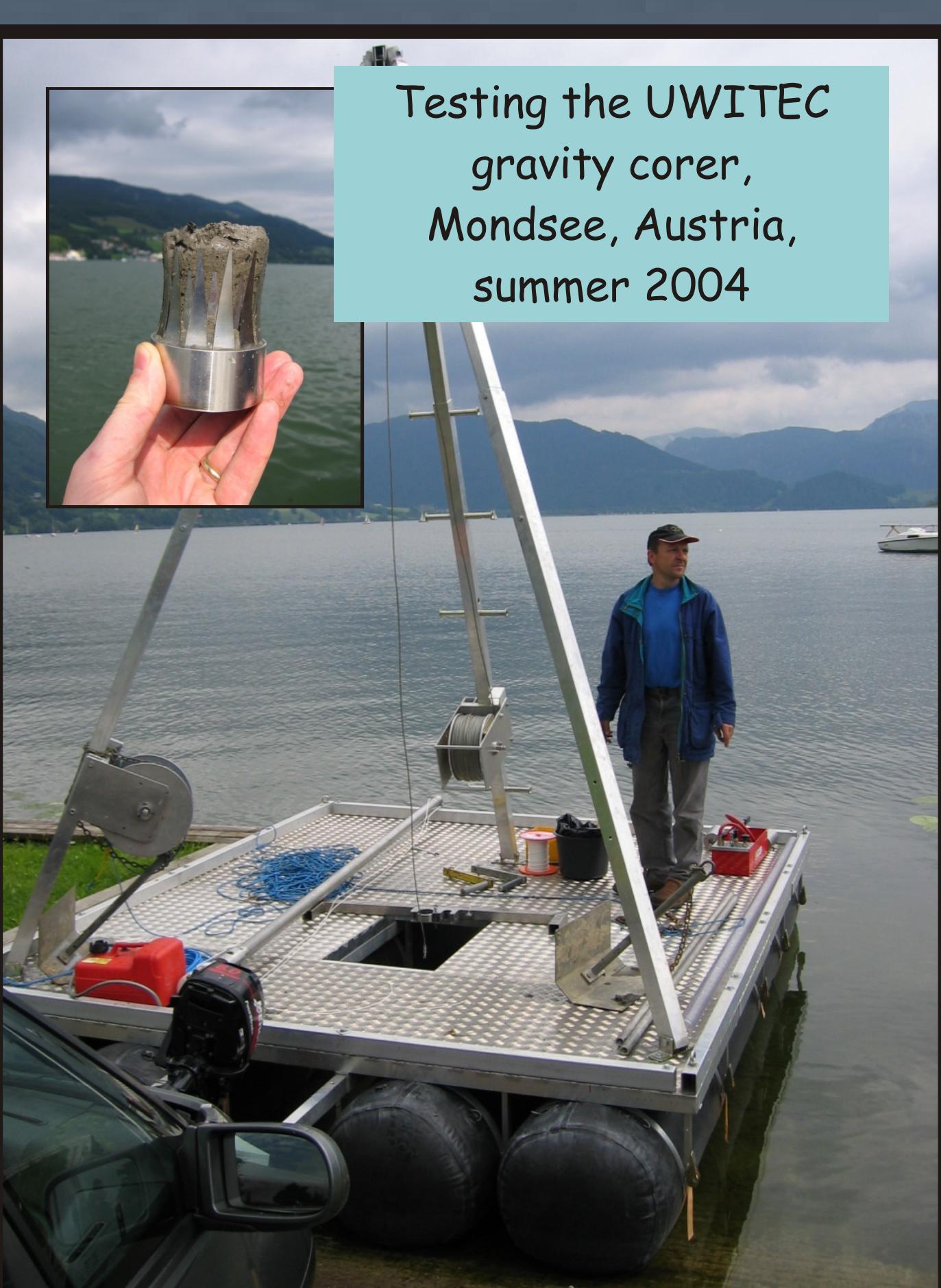
Basal sliding (tethered stake)

Instrument strings - basal water pressure
- ice column temperature
- ice column deformation

Borehole video camera - water flow

- ice fabric
- ice sediment content

Ice core sections - ice fabric
- ice sediment content



RABID - SURFACE METHODS

Seismic reflection - basal conditions
- sliding vs deforming bed
- spatial distribution

Passive seismic network - basal seismicity
- sliding mechanisms
- correlation with ice flow

GPS network - ice motion
- short-term variability
- correlation with basal seismicity

GPR - shallow firn structure

ACKNOWLEDGEMENTS & ADDITIONAL COLLABORATIONS:

Funding: NERC AFI (GR/G005), BAS, NASA
NERC Geophysical Equipment Facility
BAS Air Unit, Operations & ETS
Waleed Abdalati (NASA Cryosphere Program)

Hermann Engelhardt (CalTech)
Martin Funk (ETH, Zurich)
Graham Stuart (Leeds)
Jim Rose (Royal Holloway)

Dominic Hodgson (BAS)
Carol Pudsey (BAS)
Robert Mulvaney (BAS)
Peter Sammonds (UCL)

*Contact amsm@bas.ac.uk