

2006 Australian Earth Sciences Conference Presentations By LEME Staff and Students

MONDAY, 3 JULY

11.00 - 12.40

Geological Controversies 1 (Location: Corryong 1)

- **Baohong Hou:** Success and development in discovering beach placers in the Eucla Basin, southern Australia.

13.50 - 15.10

Spectral Sensing for Exploration 2 (Location: Corryong 4)

- **Rob Hewson:** Mapping geology associated with manganese mineralisation at Woodie Woodie, East Pilbara using spectral sensing techniques.
- **John Keeling:** Use of airborne hyperspectral and soil geochemical surveys in diamond exploration at Terowie, southern Flinders Ranges, South Australia.
- **Thomas Cudahy:**
 - Mapping alteration through the regolith at Kalgoorlie using airborne hyperspectral data.
 - Mapping non-magnetic, talc-bearing ultramafic rocks in the Kalgoorlie region.

Geological Controversies 2 (Location: Corryong 1)

- **Anna Petts:** Reading the regolith, mapping the landscape and developing an understanding of the contribution of soil biota to regolith formation in northern Australia.

Geochemistry, Mineralogy and Petrology 2 (Location: Bellarine 1)

- **Karin Barovich:** Sm - Nd isotope constraints on the Mesoproterozoic bimodal Benagerie Ridge Volcanics, South Australia.

15.40 - 17.20

Near Surface (Location: Corryong 4)

- **Michael Hatch:** Fast-sampling EM in the Riverland of South Australia.

Environmental and Geological Hazards and Risks 3 (Location: Geoscience Australia Theatre)

- John Chappell: Palaeo-climate data, challenge our understanding of climate change.

Australian Plate Margins 3 (Location: Corryong 3)

- Graham Heinson: Rifting of a passive margin and development of a lower crustal detachment zone: evidence from marine magnetotellurics.

TUESDAY, 4 JULY

9.50 - 10.50

Basins, Breakup & Continental Evolution 1 (Location: Corryong 2)

- Nick Direen: Continental break-up – lessons for the Proterozoic from Phanerozoic basins and orogens.

Australian Plate Margins 4 (Location: Corryong 3)

- John Foden: Ultra-depletion of the mantle and the development of boninite on the initiation of subduction.

Neotectonics 1 (Location: Corryong 4)

- Colin Pain: Landscape analysis for environmental issues – the question of scale.
- David Gibson: Mapping basaltic landscapes using airborne geophysics in the Lake Corangamite Catchment, Victoria.
- Jonathan Clarke: Depositional architecture of the Western Australian Wheatbelt.

10.50 - 11.20

Basins, Breakup & Continental Evolution 1 (Location: Corryong 2)

- John Foden: The South Australian Mesoproterozoic Gawler Range Volcanic - Hiltaba Granite felsic large igneous province – reflecting a cryptic lower crystal, flood basalt province.

Neotectonics 2 (Location: Corryong 4)

- David Gibson: Cenozoic faulting and landscape history around Srathalbyn, SA.

13.50 -15.10

Generation of Gold Deposits 3 (Location Corryong 1)

- John Greenfield: Orogenic Gold in the Tibooburra area of the northwestern NSW – a ~440Ma ore system with comparison to the Victorian Goldfields.

15.40 - 17.20

Environmental & Geological Hazards and Risks 7 (Location: Geoscience Australia Theatre)

- Ken Lawrie: An Earth Systems Science approach to predict and mitigate the salinity risk in Australia – gaps between conceptual understanding and on-ground management actions.
- Patrice de Caritat: Geochemical mapping of Australia: status, gaps and opportunities.

WEDNESDAY, 5 JULY

11.20 - 12.40

Salinity, Soils & Water 2 (Location: Corryong 2)

- Patrice de Caritat: Geochemical mapping of Australia – initial results from the Gawler Region pilot project.

Mineral Exploration Case Histories 2 (Location: DPI Victoria Theatre)

- John Keeling: Chinese CHIM - electro geochemical survey of extensions to the Challenger Gold Mine, South Australia.

13.30 - 13.50

Environmental & Geological Hazards and Risks 10 (Location: Geoscience Australia Theatre)

- Tim Munday: Linking geology and geophysics in the development of a robust biophysical framework for mapping salinity along the River Murray in southeastern Australia.
- Steve Rogers: WA wheatbelt salinity drainage – acid groundwater geochemical risk assessment.

14.30 - 15.10

Modelling and Visualisation 3 (Location: Bellarine 4)

- Philip Heath: Magnetic multipoles – forward modelling the gradient tensor and hybrid global/linearised inversion.

Salinity, Soils & Water 3 (Location: Corryong 2)

- Sara Beavis: Physical, geochemical and biological controls of S redox chemistry in an inland salt disposal basin.

Environmental & Geological Hazards and Risks 10 (Location: Geoscience Australia Theatre)

- Paul Wilkes: The Rural Towns - Liquid Assets Project in WA.

15.40 -17.20

Mineral Exploration Case Histories 4 (Location: BHP Billiton Nickel West Room)

- Adrian Fabris: Strategies for exploration through deep cover.

THURSDAY, 6 JULY

8.30 - 9.50

Salinity, Soils & Water 5 (Location: Corryong 2)

- Richard Creswell: Salinity in Australia - the bigger picture.

11.20 - 12.40

Salinity, Soils and Water 6 (Location: Corryong 2)

- John Wilford: A new regolith hydromorphic unit (RHU) map of the Bet Bet Catchment Area, central western Victoria – advancing understanding of salinity and groundwater processes within upland landscapes.
- Jeremy James: Bedrock controls on groundwater flow systems and regolith-landform development within the Bet Bet Catchment, Victoria – implications for salinity processes and management.

Magmatic Ore 3 (Location: Bellarine 5)

- Steve Barnes: Comparative lithogeochemistry of komatites in the Norseman Wiluna and Abitibi Greenstone belt, and implications for nickel sulphide targeting.

Uranium Geoscience 2 (Location: BHP Billiton Nickel West Room)

- Baohong Hou: Palaeochannel uranium signatures and exploration models, South Australia.

13.50 - 15.10

Salinity Soils & Water 7 (Location: Corryong 2)

- Tim Munday: Improved predictions of groundwater salinisation rates in the Tintinara Highlands area of South Australia – the role of geophysics
- Richard Creswell: Salt mass balance curves – approaches and constraints on salt accumulation.

- Kok Plang Tan: Determining salt store and mobility in the regolith, Bland Sub- Catchment Area, NSW.

Innovation 1 (Location: Bellarine 1)

- Graham Heinson: Olivine alignment, plate motion and plume geodynamics – understanding Australia's structure from long-period magnetotelluric measurements.

15.10 - 15.40

Salinity Soils & Water 8 (Location: Corryong 2)

- Simon Abbott: Farm planning using geoscience.

LEME POSTERS ON DISPLAY AT AESC

THEME 1: MINERAL RESOURCES

Supercritical fluids in alteration and mineralisation of the Central Gawler Gold Province, *Andreas Schmidt Mumm and J Brugger.*

THEME 3: ENVIRONMENT AND ENGINEERING GEOSCIENCE

A simplified geology map of the Kangaroo Valley Region, NSW: An educational tool, *Glen R Bann, R A Nanson and J C Rowntree.*

Physical, geochemical and biological controls of S redox chemistry in an inland salt disposal basin, *Sara Beavis, S Welch, D Kirsten, L Wallace, Fern Beavis, P Somerville and D C McHale.*

Laboratory measurements of electrokinetic potential from fluid flow in porous media, *Sukhyoun Kim, G Heinson and J Joseph.*

Integrating new geoscience knowledge, technologies and approaches for improved accounting of Australia's geoscience resources, *Ken Lawrie.*

Spatial and temporal variability of acidity in a coastal acid sulphate soils hotspot, *P Somerville, S Welch, Sara Beavis, D Kirsten, M Kehoe, Fern Beavis and L Issacson.*

THEME 4: GEODYNAMICS OF EARTH'S EVOLUTION

The Bombala 1:100,000 geological map, *Max C Brown and K G McQueen, G Taylor and P C Lewis.*