



- **Geoscience in the Service of Society**
- **Resources – Foundation for our Future**
- **The Evolution of Life and the Solar System**
- **Earth's Environments – Past, Present and Future**
- **The Dynamic Earth – From Crust to Core**

Resources – Foundation for our Future

Theme Coordinator: Marcus Harris

The conference brings together around 135 presenters speaking to the theme

Resources – Foundation for our Future as part of a full program on New Generation Advances in Geoscience. 450 papers and 60 posters will be presented over four days from July 21st to 24th 2008.

Presentations come from Australasian university students and researchers, Australasian government organisations including Geoscience Australia, CSIRO and leading industry explorers, miners and their service companies.

Resources – Foundation for our Future is a significant theme, being one of five themes covering earth and planetary science in the 21st century.

Precompetitive geoscience information – window into the future

As global exploration increasingly becomes focused at depth and in covered terranes, the role of government geoscience agencies in providing pre-competitive geoscience information is becoming ever more important. The strategy of providing precompetitive data at a scale immediately applicable to exploration targeting was pioneered in South Australia in the early 1990s and was incredibly successful in increasing exploration expenditure. Subsequently, this approach has been widely emulated, in Australia and overseas.

Government agencies, both Australian and others, will showcase their latest pre-competitive data sets and visions for future data collection and delivery.

Speakers on this topic arbitrarily selected from the list include:

James Johnson

Australia's onshore mineral systems and exploration potential

Nick Mortimer

Mineral exploration in New Zealand: The new GNS research framework

Hugh Davies

Geology and Resources of New Guinea

Paul Roberts

Australia's Minerals Downunder national research flagship.

Steve Rogers

How CRC LEME has provided break-throughs in exploration-14 years of innovative regolith geoscience.

John Watkins

New South Wales, New Frontiers, New Opportunities

Paul McDonald

Rediscover Victoria in 3D

Tim Griffin

Western Australia's pre-competitive geoscience program; underpinning exploration.

Being smarter with our data

In an increasingly globally- competitive industry, it is ever more important that explorers and miners optimize the business impact of the exponentially increasing data.

These are papers related to current practice and recent innovations in the practical business of mineral exploration.

Prospectivity – an emerging discipline with far reaching possibilities.

3D modeling and visualization of ore-systems- includes modeling the critical processes that result in ore deposits.

Data compilation and critical analysis such as the effective marriage of geology and geostatistics.

Speakers on this topic arbitrarily selected from the list include:

Jacqui Coombes

The art and science of data analysis

Don Singer

Quantitative Resource Assessment- Precursor to Prospectivity Analysis

Carl Knox Robinson

Taking 2D regional-scale mineral potential analysis to the next level

Subhash Jaireth

Do Bull Elephants roam in Herds? Metallogenic Endowment of Cratons, Belts and Districts.

Gary Burton

Cobar-Bourke region, NSW mineral prospectivity study

Eun Jung Holden

Gold and Diamond Exploration: An Image-Analysis Approach

Megan Hough

Predictive Modeling of gold deposits; Walhalla - Woods Point region, Victoria

Margaretha Scott

3D Modelling-implications for Resource Assessment in Queensland.

Vladimir Lisitsin

Undiscovered gold endowment in central Victoria

Mark Rattenbury

Moving from 2D to 3D geological maps of New Zealand.



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Mineral exploration strategies and technologies

These are papers related to recent innovation in the practical business of mineral exploration.

Exploration Strategies will seek to emphasize recent insights gained from mineral economic studies, risk psychology and case studies of success (and failure).

Exploration Technologies looks at the development of innovative geochemical and geophysical ore detection and geological mapping.

Speakers on this topic arbitrarily selected from the list include:

Peter Williams

The transfer of research initiatives-are new concepts driving exploration outcomes?

Andy Barnicoat

Exploration science and predictive strategies

Marcus Willson

Improving exploration success utilising integrated technologies

Neal McNaughton

Geochron testing of deposit models in the Eastern Goldfields, Western Australia

Chris Cairns

Integra Mining's exploration strategy- Does one size fit all explorers?

Craig Smith

Drilling Technology advances; neutron activation borehole logging

Mike Etheridge

The Psychology of Decision-Making in Mineral Exploration – A Key to Improving Return on Investment in our Business.

Ore systems and metallogenesis

Increasingly we understand mineral deposits as the product of larger-scale integrated ore-systems. Papers will be on recent innovations in the field of ore-system research with an emphasis on the dynamic perspective.

As an example of the cutting-edge topics that will be covered it is intended that a session be held to focus on the controversy over the role of fluid mixing in the formation of gold deposits. This will include a dedicated session from the International Association for the Genesis of Ore Deposits (IAGOD) on "Ore deposits of the Western Pacific".

Speakers on this topic arbitrarily selected from the list include:

Nick Hayward

World class IOCG ore deposits-controls on metallogenesis

Steve Beresford

New Ideas in magmatic Ni-Cu-PGE exploration geoscience.

Bruce Gemmell

Seafloor massive sulphides-Palino volcanic centre-Tyrrhenian Sea

Heather Sheldon

Mechanisms for fluid mixing in the crust-the meeting of two fluids

Nikolay Goryachev

Gold lode deposits in Orogenic Belts of Russian Segment of the Pacific Rim.

Phil Gilmore

Metallogenesis in the Koonenberry Belt, NW NSW

Geoff Derek

Mt Isa Cu,Pb,Zn,Ag mineralisation-Is it a perfect sulphide storm?

Belinda Godel

The platinum hosting Merensky Reef of the Bushveld Complex South Africa: New Research on its genesis

Rick Squire

Architecture of Archean greenstones at St Ives: a vector to gold and nickel ore

Greg Partington

Granite Related Mineral Systems in Eastern Australia and New Zealand.

John Walshe

Genesis of East Yilgarn gold deposits-fluid sources and mixing

Roger Skirrow

Uranium mineralising systems: a continuum of deposit styles?

Ross Large

Genesis of gold-arsenic deposits hosted in black shale and turbidite



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Mineral commodities

Australia is a major contributor to world output of iron ore, gold, zinc-lead-silver, uranium and nickel

With Australia exporting ever-increasing tonnages to China, India and elsewhere, the geoscientific study of our mineral resources has never been more topical.

Australia's resources are under pressure to be renewed for future generations

Case histories of discovery as well as greenfields potential of Australia and its near neighbors are presented.

Iron Ore deposits of the Hamersley and Yilgarn are compared with those of Carajas in Brazil

Nickel and associated platinum group metals papers cover Western Australia in particular.

Gold deposits are presented across many sessions, including the fluid mixing session

Uranium and basemetals copper, lead, zinc and silver deposit papers range from the general to the very specific case.

Speakers on this topic arbitrarily selected from the list include:

Stefan Hagerman

The giant Carajas jaspilite-hosted iron deposits: Carajas Brazil

Warren Thorne

High grade BIF iron ore -The #2 lens Paraburdoo, Western Australia

Stuart Robinson

Exploration and resource evaluation of Fortescue Metals Group's iron orebodies in the Pilbara-Western Australia.

Peter Muccilli

Komatiite associated nickel deposits Widgiemooltha, Western Australia

Ian Gregory

Maggy Hayes and Emily Anne nickel deposits Yilgarn Western Australia

Jane Collins

Flying Fox high grade nickel deposit, Forrestania, Western Australia

John Myers

Voisey's Bay nickel - where to find similar deposits.

Mike Solomon

Neves Corvo massive sulphide deposit -Lombador lens

Kelvin Hussey

Nolans Bore REE-P-U-Th deposit, Northern Territory

Barry Cooper

Sedimentary uranium in South Australia's Frome Embayment

Simon Beams

Rocklands Copper Deposit; Cloncurry, Queensland

Matthew Greentree

Dahongshan IOCG deposit, SW China.

Ian Mulholland

A Potential New MVT Province in Laos

Abhisit Salam

Chatree epithermal gold-silver deposit, Thailand

Robert Findlay

Tolukuma epithermal gold system, PNG

Mark Doyle

Tropicana: a new gold province in Western Australia

Tim Baker

Sunrise Dam gold deposit, Western Australia

Peter Schaub

Wyoming gold deposits, NSW

Martin Scott

Porphyry Copper-Gold Temora, NSW

Marcus Sweetapple

Wodgina mineralised pegmatites – Pilbara Western Australia

new generation advances in geoscience



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Energy resources

The availability of energy resources has never been more topical, with the world seemingly caught between the pincer movement of declining oil reserves and greenhouse-related climate change. Whatever the global response to these challenges, it is clear that the role of energy resources, both current and future, will be pivotal.

Papers will be presented on recent geoscientific advances in the understanding of Australia's energy resources.

Petroleum papers feature talks on Australian and especially Western Australian potential.

A session is devoted to carbon capture/ geosequestration of CO₂, in Australian reservoirs.

Coal papers include advances in clean coal research

Geothermal Energy derived from hot dry rocks is discussed by a leading consultant in the field.

Speakers on this topic arbitrarily selected from the list include:

Peter McCabe
Australia's Energy Future.

Fiona Holgate
Australia's Geothermal Energy Resources.

Graham Beardsmore
Geothermal systems analysis; Hot Dry Rocks as Energy Resources

Peter Eadington
Investigating Petroleum systems - micron-scale tracers in sedimentary grains

Christiane Eiserbeck
Tertiary source rocks and crude oils- molecular and isotope chronostratigraphy.

Dianne Jorgenson
Frontier petroleum exploration areas- offshore north Perth Basin

John Gorter
Reservoir facies, stratigraphy and petroleum potential - Bonapart Basin Western Australia

Irfan Khan
Hydrocarbon prospects Karak Syncline NW Pakistan.

Tess Dance
Carbon Dioxide Storage Sites: from Prospects to Pilots

Jane Blevins
Sydney basin geosequestration evaluation project. Sydney NSW

David Wright
An organogenic model for carbon sequestration

Peter Southgate
Australia's Offshore Energy Security Program

Groundwater resources

Australia's dry regions are increasingly dependent on groundwater exploitation.

A full day is devoted to the topic with a plenary address by Phil Commander on the Yarragadee Aquifer resource in southwest Western Australia.

The Yarragadee Aquifer stores about 1000 cubic kilometres of water, compared to about 20 cubic kilometres in the Gnangara Mound, that supplies Perth. As such it is seen as a potential source of water, and the Water Corporation of Western Australia currently extracts about 45 gigalitres per year from the aquifer. One cubic kilometre is equivalent to 1000 GL. Ultimately the Yarragadee Aquifer is replenished by rainfall. This groundwater

can remain in the aquifer for many years; in some areas the age of the groundwater is over 30,000 years. Geologically, the aquifer is part of what is known as the Yarragadee Formation, which is a relatively thick geological unit in the Perth Basin.

The availability of groundwater from paleodrainages and deeper aquifers is a significant part of current and planned mining operations in arid regions such as in South Australia and Western Australia.

Speakers on this topic arbitrarily selected from the list include:

Doug Brown
The Role of Hydrogeology in Mining

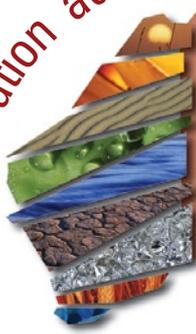
Greg Russell
Construction dewatering impacts on groundwater resources.

Jayath De Silva
Groundwater - an agent of geology in land and water salinisation; SW Western Australia

Jonathon Summer
Ngukurr Groundwater Investigation, Northern Territory, Australia

Wael Al-Azaizeh
Hydrogeology of the Shallow Aquifers at wadi el-Ghussein, NE Jordan

new generation advances in geoscience



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Student Careers Night

Competition for geosciences graduates has never been tougher and the opportunities available to students have never been greater. Therefore, this year's Geoscience Careers night is a must for companies working across different disciplines and also for students.

As the 2008 AESC will be hosted in Perth, students from the eastern states will get to attend this great West Australian industry networking night, therefore increasing the exposure for employers seeking to connect with students.

GeoTrivia

Looking for an opportunity to outsmart your rival company, survey or university?

Create a state-based team and fight it out to be the 2008 geoscience trivia champions and get involved in the lighter side of geoscience.

Food and drink supplied and prizes awarded.

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