### School of Earth and Environmental Sciences

#### Academic Staff

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Room</th>
<th>Telephone</th>
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<tr>
<td><strong>Head</strong></td>
<td>Professor L. Head</td>
<td>41.G14</td>
<td>4221 3721</td>
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<td>e-mail: <a href="mailto:lhead@uow.edu.au">lhead@uow.edu.au</a></td>
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<td><strong>Professors</strong></td>
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<td>Professor A.R. Chivas</td>
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<td>Professor J. Morrison</td>
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<td>Professor M. Morwood</td>
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<td>Professor C.V. Murray-Wallace</td>
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<td>Professor G.C. Nanson</td>
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<td>Professor R.G. Roberts</td>
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<td>Professor C.D. Woodroffe</td>
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<td><strong>Associate Professors</strong></td>
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<td>Assoc. Prof. C.L. Fergusson</td>
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<td>Assoc. Prof. C. Gibson</td>
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<td>Assoc. Prof. B.G. Jones</td>
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<td>Assoc. Prof. G. Waitt</td>
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<td><strong>Senior Lecturers</strong></td>
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<td>Dr L. Chisholm</td>
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<td>Dr N. Gill</td>
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<td>Dr M. L. Puotinen</td>
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<td><strong>Lecturers</strong></td>
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<td>Dr S. Buckman</td>
<td>41.163</td>
<td>4221 5950</td>
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<td><strong>Student Liaison</strong></td>
<td>Ms Marina McGlinn</td>
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<td>Ms Sandra Quin</td>
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Course / Major Coordinators

Bachelor of Environmental Science, BSc (Environment)  Prof. Colin Murray-Wallace

BSc (Geology)  Assoc. Prof. Chris Fergusson

BSc (Geosciences)  Dr Marji Puotinen

BSc (Human Geography, Land and Heritage Management)  Assoc. Prof. Gordon Waitt

BSc (Physical Geography)  Dr Marji Puotinen

Honours Program  Assoc. Prof. Chris Fergusson

The School of Earth and Environmental Sciences comprises the disciplines of Geography, Geology and Environmental Science. Major studies in Geography and Geology may be undertaken in the following degrees:

- Bachelor of Science (majors or prescribed interdisciplinary majors)
- Bachelor of Arts (a major must be taken jointly with an Arts major)
- Bachelor of Environmental Science (Earth Science and Land Resources strands)
- Bachelor of Marine Science (Marine Geoscience strand)

Academic Advice

Regular academic advice is provided to undergraduate students who have indicated that they wish to pursue Geography and/or Geology majors. Each student is assigned to a member of the academic staff who will act as an academic coordinator and mentor. Staff members and students should meet at least twice a year to discuss, in particular, progress and course details.

Major Studies for the Bachelor of Science and Bachelor of Arts

Students may elect to complete one of the following majors or combined majors. Full course outlines are provided in Section 7.1.

- Geology
- Geosciences
- Human Geography
- Physical Geography

Bachelor of Science Prescribed Majors

The following prescribed majors are available in the Earth and Environmental Sciences. Entry to one of these majors must be approved by the Dean or Associate Dean. The details of these majors are given in Section 7.2.

- Ecology (jointly with the School of Biological Sciences)
- Environment (in conjunction with the other Science Schools)
- Land and Heritage Management

All degrees can be taken on a part-time basis, but students must be able to organise their time to meet the scheduled class times.

Current Research Interests

This is useful information for students wishing to identify staff expertise in particular academic areas.

Dr Sol Buckman

Plate tectonics and mechanisms of intraplate mountain building. Crustal-scale processes involved in the formation of metallic ore deposits. Charcoal in Quaternary sedimentary sequences and paleofire studies.

Associate Professor Paul Carr

Mineralogy and igneous petrology, especially conditions of mineral formation; volcanology.

Professor Bruce Chappell

Geochemistry and genesis of granitic and associated volcanic rocks

X-ray Fluorescence (XRF) analysis

New England and Lachlan Orogens - tectonic and metallogenic evolution
Dr Laurie Chisholm
Application of remote sensing and GIS technologies to environmental management and resource assessment in general. Specific interests in hyperspectral remote sensing for discriminating vegetation stress, type and foliar biochemistry; sub-pixel analysis of hyperspectral imagery; integration of radar and optical data.

Professor Allan Chivas
Low-temperature geochemistry - Chemical, C-14, Cl-36 and stable-isotope studies of the formation and evolution of modern and ancient lake basins, coral reefs, near-shore and deep-sea sediments, weathering profiles and laterites. Chemical hydrology, palaeoceanography and atmospheric chemistry. Chemical and isotopic studies of ore deposits.

Associate Professor Christopher Fergusson
Regional geology and tectonics of the Tasmanides of eastern Australia; tectonic studies in the Appalachians of western Newfoundland and the Zagros mountain belt of western Iran; sedimentology of deep-marine sediments.

Associate Professor Chris Gibson
Social and Economic Geography; History and Philosophy of Geography; Creative Industries; Cultural Planning for Cities & Regions; Tourism.

Dr Nicholas Gill
Rural social and cultural change; cultural and historical aspects of arid zone pastoralism; Aboriginal land use; cultural geography and environment; environmental policy.

Professor Lesley Head
Australian prehistory and environmental change; cultural landscapes; past and present Aboriginal land use; pollen and charcoal analysis.

Dr Zenobia Jacobs
Development of optically stimulated luminescence dating techniques for individual sand grains
Extending the age range of luminescence dating of quartz
Timing of the anatomical and behavioural origins of Homo sapiens in Africa and their dispersal ‘Out of Africa’
Quaternary environmental change and its impact on the evolution and dispersal of Homo sapiens

Associate Professor Brian Jones
Sedimentology of fluvial, fluvio-deltaic and volcaniclastic sequences; basin analysis; petrology of petroleum reservoir rocks; application of mathematical techniques to geological problems; coastal ecology.

Professor John Morrison
Estuarine science and management, especially nutrient budgeting; watershed management; soil genesis and management; pollution prevention and waste management; environmental chemistry, particularly in the area of coastal marine pollution; and Pacific small island environments.

Professor Mike Morwood
Archaeology of Southeast Asia and Australia; early hominin evolution and dispersals; origins of modern humans; rock art; Southeast Asian biogeography; ethnoarchaeology.

Professor Colin Murray-Wallace
Quaternary studies and global environmental change; sedimentology and stratigraphy; amino acid racemisation, electron spin resonance and radiocarbon dating; coastal evolution and sea-level change; neotectonics.

Professor Gerald Nanson
River channel erosion. Floodplain formation of rivers of arid and tropical regions. Quaternary environmental change. Thermoluminescence dating.

Dr Marjetta (Marji) Puotinen
Spatio-temporal modelling of the effects of natural disturbance impacts on ecological systems in both terrestrial (eg, fire) and marine (eg, cyclone impacts on coral reefs) environments using geographic information systems.

Professor Richard (Bert) Roberts
Application of luminescence dating methods in the Earth and archaeological sciences; development of optically stimulated luminescence dating techniques for individual sand grains; timing of human evolution, dispersal and impact in Southeast Asia and Australia; dating of prehistoric rock art and palaeoecological records; timing and causes of megafaunal extinction events; quaternary landscape evolution and environmental changes; sediment mixing in natural and anthropogenic deposits.

Associate Professor Gordon Waitt
Economic restructuring; international trade and tourism, marketing places.

Professor Colin Woodroffe