

Guest Editorial

Promoting effective, collaborative, interdisciplinary research

Antarctic fieldwork in an inhospitable environment, means that small and diverse groups must work, live, and play together in confined spaces, depending upon one another for company, support, and even survival. Lifelong friendships can develop as a result. Such social interactions cross over into work. Many of our Antarctic science conferences also provide a unique format for information sharing across a wide range of disciplines. At Antarctic meetings, microbiologists, marine ecologists, physicists, geologists, social scientists, and others, find themselves talking to one another in a way that they rarely encounter in other more discipline-focussed forums. Given the current financial environment, organizations are being forced to maximize returns on their expenditure and are looking to more effective interdisciplinary collaboration as a means to that end. The journal *Antarctic Science* also recognizes the unique Antarctic research environment with an editorial policy that “provides a focus for many of the interdisciplinary interests that characterize Antarctic studies”.

Effective, productive, and innovative collaboration can only work when it is underlain by friendship and trust between the collaborators. Thus the Antarctic environment should be more than normally conducive to development of wider collaborative relationships. However, for all the underlying synergies, relatively few Antarctic research projects cross wide discipline boundaries and forcing unwilling partnerships in the name of interdisciplinary science will never be conducive to effective outcomes.

This Special Issue of *Antarctic Science* features work from the New Zealand led Latitudinal Gradient Project (LGP). The LGP has been a means by which relatively small research programmes, ranging from marine ecology to glacial history, with workers scattered across the globe, have all contributed to exploring the changes along a latitudinal gradient as a proxy for climate change. The LGP has enabled cost-effective long-term planning and shared logistics to be co-ordinated between groups and provides a focus, such as this Special Issue, to ensure that results are reported in a timely fashion. The LGP has been operating for eight years, has involved over 15 separate research groups and over 3000 field-person-days stretched across a 1500 km latitudinal gradient along the Transantarctic Mountains from Cape Hallett in the north (72°S) to the Beardmore Glacier (85°S). The LGP programme has also attracted contributors who have worked across the Antarctic Continent to the Antarctic Peninsula and has resulted in over 50 publications. Howard-Williams *et al.* (this issue) provide a synthesis of the outcomes that are represented in the accompanying papers. Many workers have concluded that the impacts of parameters such as local climate, moisture availability, ice barriers, and surface age are more influential in driving ecological processes than latitude as such. An improved understanding of the drivers of ecological and environmental processes across the Ross Sea region and beyond is being achieved. The success of the LGP has not been in proving the original hypothesis, but rather, in bringing a wide range of research programmes within one co-operative umbrella. Effective, professional, co-ordination and management of the project, supported by Antarctica New Zealand, has been pivotal to LGP success. The LGP is now entering a final phase but its legacy will live on in having provided a strong model on which to build future interdisciplinary projects and strong collaborative work ethics and friendships. The challenge for all is to take the strengths of the LGP and build an even wider collaborative programme for the future, geographically, internationally, and across the science disciplines. There are plans to initiate a new “Gradients Programme” with international representation on the science committee that will develop the new direction of this work. We would welcome your input.

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