

**The relationship between migmatization and granite magmatism in the northeastern Gander zone:
evidence from Sm-Nd isotopic characteristics
(poster)**

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Focussed zones of high grade metamorphism, migmatization and granite plutonism are key elements of the Ordovician-Silurian evolution of the northeastern Gander zone of Newfoundland. High temperature-low pressure migmatization was the result of both regional metamorphism within transpressional shear zones and locally advected heat from plutons. Sm-Nd isotopic characteristics of metasedimentary rocks, gneisses and intrusive granitoids place some constraints upon their origins. A marked similarity in ϵ_{Nd} (-8 to -6) for low grade Gander Group metasediments and sillimanite bearing paragneisses of the Hare Bay Gneiss are most consistent with derivation from the same protolith sedimentary sequence. Despite some open system behavior, these isotopic signatures can be traced into zones of local (contact) and regional

migmatization and partial melting, fingerprinting the upper crustal contribution to granite magmatism. Voluminous Silurian megacrystic granites (ϵ_{Nd} -5 to 0) were not derived from such a source, nor were they derived exclusively from the mantle. The most likely source was lower crust and mantle, variably contaminated by mid- to upper crust, ϵ_{Nd} characteristics resulting from systematic changes in relative contributions through time. Pre-Silurian metasedimentary sequences and orthogneisses, and Silurian-Devonian intrusive granites of the northeastern Gander zone contrast with those of the Dunnage, Humber, and Avalon zones confirming fundamental differences in the underlying crustal blocks and palinspastic separation prior to terrane assembly.