OCGC Seminar

Basin Evolution Documented by Detrital Zircons in the Trans-Adirondack Back-Arc Basin, Adirondack Lowlands, NY

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Natural Resources Canada
588 Booth Street
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Ressources naturelles Canada
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The stratigraphy of the Adirondack Lowlands consists of a deformed, but well-documented, sequence of ca. 1300-1250 Ma metasedimentary rocks including, from bottom to top, the Pyrites Complex (ultramafic-mafic rocks and associated turbidities), the Lower Marble (calcitic and dolomitic marbles), the Popple Hill gneiss (pelitic gneisses and amphibolite layers), and the Upper Marble (dolomitic marbles, calc-silicates, and meta-evaporites).

Detrital zircons from upper amphibolite facies quartzose units throughout the stratigraphy track evolution of their provenance through rifting, drifting, foredeep development, and eventual compression, leading to evaporite-sedex (Sp-Py-Gn-Asp-Ccp±Ag) couplets. In contrast to zircons from granulite-facies quartzites in the Adirondack Highlands, Pb-loss, recrystallization, and/or metamorphic growth is volumetrically insignificant.

Biography: Chiarenzelli is a 1983 graduate of Carleton University where he obtained his master's degree supervised by Dr. J. Allan Donaldson. Subsequently he obtained a Ph.D. for his work on the Sask Craton, Trans-Hudson Orogen from the University of Kansas ('89). Currently he serves as the Charles A. Dana Professor of Mineralogy at St. Lawrence University where he teaches mineralogy, geochemistry, environmental geology, and alternative energy technologies.

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