

Application for a:	Outgoing Scheme NEWFELPRO Fellowship for senior researcher
Proposal Acronym:	IsotopicRedoxTools
Proposal Title:	Using lakes to develop isotopic tools for understanding ocean redox through Earth history
Research area(s):	Environment and geosciences ENV
Research sub-disciplines:	Climatology and climate changes Paleoclimatology - paleoecology Oceanography Sedimentology - soil science - palaeontology - earth evolution
Category of research:	developmental
Duration in months:	36
Keywords:	isotopic tools, ocean redox, Earth history, molybdenum, uranium, hypoxic, anoxic
Abstract:	<p>Molecular oxygen (O₂) is the source of Earth's UV screen, and is the driving force for the metabolism of all advanced, and many primitive, life forms. Though abundant in Earth's modern atmosphere, O₂ was probably present in vanishingly small amounts until about half way through Earth history.</p> <p>Almost all attempts to reconstruct and understand Earth's redox history rely on the record of ocean chemistry preserved in chemical sediments precipitated in the oceans. Recently, the chemistry and isotope geochemistry of trace metals in these sediments have been prominent in studies of oceanic redox history.</p> <p>Modern analogs of ancient anoxic and euxinic oceans that can be used for testing the trace metal methods are rare. The objective here is to use two lakes to bridge this gap.</p> <p>Proposed fellowship seeks to develop, understand, and to eventually apply, new chemical and isotopic tools that will advance our understanding of changes in ocean redox on the past – and perhaps present – Earth.</p>
Does this proposal possess any of the sensitive ethical issues detailed in ethical issues table?	No