

## **Linda V. Godfrey**

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### A) Professional Preparation

B.Sc. (Hons.) First class - Chemistry; 1986, St. Andrews University; St. Andrews.  
Ph.D. - Marine Geochemistry, 1990, Cambridge University, Cambridge, England.

### B) Professional Appointments

Assistant Research Professor, Rutgers University, SAS, July 2012 to present.  
Research Associate, Rutgers University, SEBS, July 2003 to July 2012  
Visiting Assistant Professor, Lehigh University, 2001-2003  
Research Associate and Laboratory Manager, Cornell University, 1996-2001  
Post-doctoral Investigator (Dr William White), Cornell University, 1993-1996  
Post-doctoral Investigator (Dr Hilary Kennedy), University of Wales, 1990-1993

### C) Publications: peer-reviewed journals

- Álvarez-Amado, F., Tardani, D., Poblete-González, C., Godfrey, L., Matte-Estrada, D., (2022) Hydrogeochemical processes controlling the water composition in a hyperarid environment: New insights from Li, B, and Sr isotopes in the Salar de Atacama, *Sci. Total Environ.*, 835, 155470.
- Álvarez-Amado, F., Rosales, M., Godfrey, L., Poblete-González, C., Morgado, E., Espinoza, M., Hidalgo-Gajardo, A., Volosky, D., Cortés-Aranda, J., The role of ignimbrites and fine sediments in the lithium distribution and isotopic fractionation in hyperarid environments: Insights from Li-isotopes in the Atacama Desert, *J. Geochem. Exploration*, 241, 107062.
- Spry, P.G., Mathur, R.D., Teale, G.S., Godfrey, L.V., (2022) Zinc, sulfur and cadmium isotopes and Zn/Cd ratios as indicators of the origin of the supergiant Broken Hill Pb–Zn–Ag deposit and other Broken Hill-type deposits, New South Wales, Australia, *Geol. Mag.*, 10.1017/S0016756822000590
- Emproto, C., Mathur, R., Simon, A., Bindeman, I., Godfrey, L., Dhnaram, C., Lisitsin, V., (2022) Integrated O, Fe, and Ti isotopic analysis elucidates multiple metal and fluid sources for magnetite from the Ernest Henry Iron oxide copper gold (IOCG) Deposit, Queensland, Australia. *Ore Geol. Rev.*, 150, 105170
- Gamboa, C., Godfrey, L., Urrutia, J., Herrera, C., Jordan, T., (2022) Conditions of Recharge in the Hyperarid Southern Atacama Desert, *Global and Planetary Change*. 217, 103931

- Matt, P., Peck, W.H., Mathur, R., Hurtgen, M.R., Godfrey, L. (2022) Zinc Isotope Constraints on the Formation of Sedimentary Exhalative (SEDEX) ore deposits: New Evidence from the Franklin, NJ Mining District, *Ore Geol. Rev.* 147, 104970, doi.org/10.1016/j.oregeorev.2022.104970
- Mathur, R., Emprato, C., Simon, A.C, Godfrey, L., Knaack, C., Vervoort, J.D. (2022) A Chemical Separation and Measuring Technique for Titanium Isotopes for Titanium Ores and Iron-Rich Minerals, *Minerals*, 12(5), 644; <https://doi.org/10.3390/min12050644> (registering DOI)
- Boucher, R.D., Alavi, S.E., de Jong, H.N., Godfrey, L.V., Vogel, E.R., Stable isotope evidence (Fe, Cu) suggests that sex, but not aging is recorded in rhesus macaque (*Macaca mulatta*) bone, (2021) *Amer. J. Phys. Anthropol.*, 176, 1-13
- Powell, W. Johnson, M., Pulak, C., Yener, K.A., Mathur, R., Bankoff, H.A., Godfrey, L. Price, M., Galili, E. (2021) From peaks to ports: Insights into tin provenance, production, and distribution from adapted applications of lead isotopic analysis of the Uluburun tin ingots, *J. Archaeological Science*, 134, 105455, doi.org/10.1016/j.jas.2021.105455
- Zhai, D., Mathur, R., Liu, S.-A., Liu, J., Godfrey, L., Wang, K., Xu, J., Vervoort, J. (2021) Antimony isotope fractionation in hydrothermal systems, *Geochim. Cosmochim. Acta* 306, 84-97.
- Mathur, R., Mahan, B., Spencer, M., Godfrey, L., Landman, N., Garb, M., Pearson, D.G., Liu, S.-A., Oboh-Ikuenobe, F.E. (2021) Fingerprinting the Cretaceous-Paleogene boundary impact with Zn isotopes, *Nature Comm.*, 12(1), 1-8
- Godfrey, L.V., Herrera, C., Burr, G.S., Houston, J., Aguirre, I., Jordan T.E.,  $\delta^{13}\text{C}$  and  $^{14}\text{C}$  activity of DOC and DIC in groundwater on the Loa Basin of northern Chile. (2021) *J. Hydrology*, 595, 125987, doi.org/10.1016/j.hydro.2021.125987.
- Herrera, C., Godfrey, L., Urrutia, J., Custodio, E., Jordan, T., Jódar, J., Delgado, K., Barrenechea (2021) Recharge and residence times of groundwater in hyper arid areas: The confined aquifer of Calama, Loa River Basin, Atacama Desert, Chile, *Science of the Total Environment*, 752, 141847
- Rigo, M., Onoue, T., Tanner, L.H., Lucas, S.G., Godfrey, L., + 13 others (2020) The Late Triassic Extinction at the Norian/Rhaetian boundary: Biotic evidence and geochemical signature, *Earth Science Reviews*, 204, 103180
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- Garcia, M.G., Borda, L.G., Godfrey, L.V., López Steinmetz, R.L., Losada-Calderon, A., (2020) Characterization of lithium cycling in the Salar De Olaroz, Central Andes, using a geochemical and isotopic approach. *Chemical Geology*, 531, 119340.
- Jordan, T.E., Lohman, R.B., Tapia, L., Pfeiffer, M., Scott, C.P., Amundson, R., Godfrey, L., Riquelme, R., (2020) Surface materials and landforms as controls on InSAR permanent and transient responses to precipitation events in a hyperarid desert, Chile. *Remote Sensing of Environment*, 237, 111544.
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- Gamboa, C., Godfrey, L., Herrera, C., Custodio, E. Solar, A. (2019) The origin of solutes in groundwater in a hyper-arid environment: A chemical and multi-isotope approach in the Atacama Desert, Chile, *Science of the total Environment*, 690, 329-351
- Jordan, T. E., Herrera L., C., Godfrey, L., Colucci, S. J., Gamboa P., C., Urrutia M., J., González L., G. & Paul, J. F., (2019) Isotopic characteristics and paleoclimate implications of the extreme precipitation event of March 2015 in Northern Chile, *Andean Geology*. 46, 1, 1-31.
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- Wang, D., Mathur, R., Powell, W., Godfrey, L. Zheng, Y. (2019) Experimental evidence for fractionation of tin chlorides by redox and vapor mechanisms, *Geochimica et Cosmochimica Acta*. 250, 209-218.
- Li, W., Liu, X. M., Godfrey, L., (2019) Optimisation of Lithium Chromatography for Isotopic Analysis in Geological Reference Materials by MC-ICP-MS, *Geostandards and Geoanalytical Research*. 43, 261-276.
- Drake, J. L., Schaller, M. F., Mass, T., Godfrey, L., Fu, A., Sherrell, R., Rosenthal, Y., Falkowski, P. (2018) Molecular and geochemical perspectives on the influence of CO<sub>2</sub> on calcification in coral cell cultures, *Limnology and Oceanography*. 63, 107-121.
- Su, J., Mathur, R., Brumm, G., D'amico, P., Godfrey, L., Ruiz, J., Song, S., (2018) Tracing copper migration in the tongling area through copper isotope values in soils and waters, *International journal of environmental research and public health*. 15, 12, 2661.
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- Mathur, R., Powell, W., Mason, A., Godfrey, L., Yao, J., Baker, M. E., (2017) Preparation and Measurement of Cassiterite for Sn Isotope Analysis, *Geostandards and Geoanalytical Research*. 41, 701-707.
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- de Wet, C. B., Godfrey, L., de Wet, A. P., (2015) Sedimentology and stable isotopes from a lacustrine-to-palustrine limestone deposited in an arid setting, climatic and tectonic factors: Miocene-Pliocene Opache Formation, Atacama Desert, Chile., *Palaeogeography, Palaeoclimatology, Palaeoecology*. 426, 46-67.
- Godfrey, L., Poulton, S. W., Bebout, G. E., Fralick, P. W., (2013) Stability of the nitrogen cycle during development of sulfidic water in the redox-stratified late Paleoproterozoic Ocean, *Geology*. 41, 655-658.
- Godfrey, L., Chan, L. H., Alonso, R. N., Lowenstein, T. K., McDonough, W. F., Houston, J., Li, J., Bobst, A., Jordan, T. E., (2013) The role of climate in the accumulation of lithium-rich brine in the central Andes, *Applied Geochemistry*. 38, 92-102.
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- Godfrey, L., Field, M. P., Sherrell, R., (2008) Estuarine distributions of Zr, Hf, and Ag in the Hudson River and the implications for their continental and anthropogenic sources to seawater, *Geochemistry, Geophysics, Geosystems*. 9, Q12007.
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- Godfrey, L., White, W. M., Salters, V. J. M., (1996) Dissolved zirconium and hafnium distributions across a shelf break in the northeastern Atlantic Ocean, *Geochimica et Cosmochimica Acta*. 60, 3995-4006.
- Godfrey, L., Mills, R., Elderfield, H., Gurvich, E., (1994) Lead behaviour at the TAG hydrothermal vent field, 26°N, Mid-Atlantic Ridge, *Marine Chemistry*. 46, 237-254.

#### D) Presentations and Invited Talks

- Godfrey, L. Setera, J., Kay, S.M., (2018) Low Temperature Weathering of Ignimbrites as a Source of Li to the Brine Deposits of the Central Andes, an Isotope Perspective. Fall meeting American Geophysical Union.
- Godfrey, L.V., Herrera, C., Jordan, T.E., (2015) Un método multi-isótopo para entender la reacciones de meteorización en el norte de Chile, Chilean Geological Congress.
- Lagos, L.V., Godfrey, L.V., Reich, M., Achurra, L., Morata, D., Aguirre, I., Mayorga, C., (2015) Disentangling the impact of evaporitic deposits and saline lakes in thermal waters from the Chilean Altiplano using  $\delta^7\text{Li}$ ,  $\delta^{11}\text{B}$ ,  $^{87}\text{Sr}/^{86}\text{Sr}$ , and trace element geochemistry, *Goldschmidt*.
- Drake, J.L., Schaller, M.F., Mass, T., Godfrey, L., Rosenthal, Y., Sherrell, R. Falkowski, P.F., (2014) Effects of  $p\text{CO}_2$  on production of  $\text{CaCO}_3$  by skeletal organic matrix in coral cell cultures. Gordon Research Conference, Ocean Global Change Biology.
- Godfrey, L., Herrera, C., Jordan, T., Burr, G., (2014) Carbon-14 groundwater dating in Northern Chile using paired DOC and DIC techniques. *Goldschmidt*.

- Godfrey, L.V., Bebout, G.E., (2010), Preservation of ancient sedimentary nitrogen isotope records. GSA.
- Godfrey, L.V., Falkowski, P.G., (2008), The nitrogen cycle in the late Archean ocean. Fall AGU.
- Godfrey L., King, R., Zimmermann, B., Vervoort, J., Halliday, A., (2007). Extreme Hf isotope signals from basement weathering and its influence on the seawater Hf-Nd isotope array. Goldschmidt.
- Godfrey, L., Jordan, T., (2006) Focused groundwater flow and the accumulation of giant salt deposits in the Salar de Atacama. GSA.
- Godfrey, L.V., Chan, L.-H., Alonso, R.N., Jordan, T.E. and Lowenstein, T.K. (2002) Isotope constraints on brine formation in closed basin salars, NW Argentina. Goldschmidt.
- Godfrey, L.V., Jordan, T.E., Lowenstein, T.K., Bobst, A.L., Hein, M.C. and Alonso, R.N. (2000) Stable isotope constraints on the transport of water to the Andes between 20° and 30° S during the last glacial cycle. GSA.
- Lowenstein, T.K., Li, J., Hanna, J., Godfrey, L.V. and Jordan, T.E. (1998) 80,000 year paleoclimate record from the arid Andes, Salar de Hombre Muerto, Argentina, GSA 30,7.
- Godfrey, L.V., Lowenstein, T.K., Li, J., Luo, S., Ku, T.-L., Alonso, R.N. and Jordan, T.E. (1997) Continuous late Pleistocene paleoclimate record from a salt core, Salar de Hombre Muerto, Argentina. VIII Congreso Geológico Chileno, Antofagasta, Chile.
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- Godfrey, L.V., Lee, D.-C., Halliday, A.N., Hein, J.R., Salters, V.J.M. and White, W.M. (1996) Hafnium isotopes in ferromanganese deposits: A record of eHf in seawater? EOS 77, 323.
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- Godfrey, L.V., Lee, D.-C., Salters, V.J.M., Halliday, A.N., Hein, J.R. and White W.M. (1995) The reliability of ferromanganese crusts as recorders of the Hf isotopic composition of seawater. EOS 76, 320.
- Godfrey, L.V., White, W.M. and Salters, V.J.M. (1994) Preliminary results of the behavior of hafnium and zirconium in the marine environment. ESO 75, 330.
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- Godfrey, L.V. and Elderfield, H. (1991) Sr and Pb isotopes in North Pacific red clays. EUG.
- Godfrey, L.V., Jarvis, K.E., Williams, J. and Elderfield, H. (1988) Determination of Pb isotope ratios by ICPMS. 2<sup>nd</sup> International Conference on Plasma Spectroscopy.