CURRICULUM VITAE

JOHN S. COMPTON

Education

Harvard University	Earth Science	Ph.D.	1986
University of California, San Diego	Chemistry/Earth Science	B.A.	1981

Professional Background

2004-present	Associate Professor, Department of Geological Sciences, University of Cape Town
1996-2003	Senior Lecturer, Department of Geological Sciences, University of Cape Town.
1992-1996	Associate Professor, Department of Marine Science, University of South Florida.
1994 (Jan.-April)	Visiting Research Associate, Environmental Defense Fund, New York City.
1986-1992	Assistant Professor, Department of Marine Science, University of South Florida.
1981-1986	Ph.D. Dissertation, Harvard University: Early Diagenesis and Dolomitization of the Monterey Formation, California.

Areas of Specialization

Low-temperature and sedimentary geochemistry of marine sediments.
Geochemical cycles and Earth history.

Professional Societies – Offices held

American Geophysical Union
Southern African Society for Quaternary Research (SASQUA) President 2003-2005
SCOR (Scientific Committee on Oceanic Research) Executive Committee 2008-2012
South African National Committee member 2005-2012; President 2009-2012; 2013-2015
Geological Society of South Africa (Council Vice Chair of the Western Cape Branch 2005-2011)

Teaching Experience

University of Cape Town (1996 to present)
Course Convenor: Introduction to Earth and Environmental Sciences (GEO 1009F/ERT 1009F)
Honours Module: Marine Geochemistry
Course Lecturer: Stratigaphy and Economic Geology (Geo3001S), Exploration and Environmental Geochemistry (GEO 304F) (1996 to 2001)

University of South Florida (1986 to 1996)
Developed two graduate courses: Geochemistry of Marine Sediments
Diagenesis Seminar
Team-taught departmental core course: Geological Oceanography
Awards Certificate of Recognition in Education, Graduate Council and Graduate School, University of South Florida (1994)

Harvard University (1984-1986)
Graduate Student Teaching Fellow
Senior Honours Thesis Advisor
Geology Tutor/Undergraduate Advisor, Currier House, Harvard College
Awards Certificate of Distinction in Teaching, Committee on Undergraduate Education, Harvard University 1983

Cruise/Field Experience

Jan.-Feb. 2003	R/V METEOR Cruise M57-1 to study the Quaternary history of upwelling along the western margin of South Africa and records of continental - marine connections.
Jun.- Jul.1993	R/V JOIDES Resolution Inorganic geochemist on Ocean Drilling Program Leg 150 to study the sea-level history of the New Jersey margin.
June 1991	R/V Bellows - Co-chief scientist on a seismic survey of the east Florida coast.
June 1989	Invited participant in joint U.S.-Japanese seminar and field workshop entitled "Neogene siliceous sediments of the Pacific Region," Santa Cruz, California.
Sep.-Oct.1988	R/V JOIDES Resolution Inorganic geochemist on Ocean Drilling Program Leg 123 to study the Argo Abyssal Plain and Exmouth Plateau, northeast Indian Ocean.
May 1988	Invited participant in IGCP Project 156 workshop "Genesis of Cenozoic Phosphorites and Associated Organic-Rich Sediments: Peruvian Continental Margin," Lima, Peru.

Publications - Articles in Refereed Journals

Compton, J. S. and R. Siever. 1986. Diffusion and Mass Balance of Mg During Early Dolomite Formation, Monterey Formation. *Geochimica et Cosmochimica Acta* 50, 125-135.

Compton, J. S. 1988. Degree of supersaturation and precipitation of organogenic dolomite. *Geology* 16, 318-321.

Compton, J. S., S. W. Snyder and D. A. Hodell. 1990. Phosphogenesis and weathering of shelf sediments from the southeastern United States: Implications for Miocene $\delta^{13}C$ excursions and global cooling. *Geology* 18, 1227-1230.

Compton, J. S. 1991. Porosity reduction and burial history of siliceous rocks from the Monterey and Sisquoc Formations, Pt. Pedernales area, California. *Geological Society of America Bulletin* 103, 625-636.

Compton, J. S. 1991. Origin and diagenesis of clay minerals in the Monterey Formation, Santa Maria basin area, California. *Clays and Clay Minerals* 39, 449-466.

Compton, J. S., L. B. Williams and R. E. Ferrell, Jr. 1992. Mineralization of organogenic ammonium in the Monterey Formation, California. *Geochimica et Cosmochimica Acta* 56, 1979-1991.

Compton, J. S. 1992. Early diagenesis and the origin of diagenetic carbonate in sediment recovered from the Argo Basin, Northeast Indian Ocean, Site 765. In: Gradstein, F. M., and J. Ludden, et al., eds., *Proc. ODP, Sci. Results*, 123: College Station, TX (Ocean Drilling Program), 77-88.

Compton, J. S. and S. D. Locker. 1992. Diagenesis of clay and silica minerals in sediments from the Argo Basin, northeast Indian Ocean, (Site 765). In: Gradstein, F. M., and J. Ludden, et al., eds., *Proc. ODP, Sci. Results*, 123: College Station, TX (Ocean Drilling Program), 57-75.

Compton, J. S., D. Mallinson, T. Netratanawong and S. D. Locker. 1992. Regional correlation of mineralogy and diagenesis of sediment from the Exmouth Plateau and Argo Basin, northwestern Australian continental Margin. In: Gradstein, F. M., and J. Ludden, et al., eds., *Proc. ODP, Sci. Results*, 123: College Station, TX (Ocean Drilling Program), 779-790.

Compton, J. S., D. A. Hodell, J. R. Garrido and D. J. Mallinson. 1993. Origin and age of phosphorite from the south-central Florida Platform: Relation of phosphogenesis to sea-level fluctuations and $\delta^{13}C$ excursions. *Geochimica et Cosmochimica Acta* 57, 131-146.

Compton, J. S., D. L. Hall, D. J. Mallinson and D. A. Hodell. 1994. Origin of dolomite in the phosphatic Miocene Hawthorn Group of Florida. *Journal of Sedimentary Research* A64, 638-649.

Mallinson, D. J., J. S. Compton, S. W. Snyder and D. A. Hodell. 1994. Strontium isotopes and Miocene sequence stratigraphy across the northeast Florida Platform. *Journal of Sedimentary Research* B64, 392-407.

Compton, J.S. and D.J. Mallinson. 1996. Geochemical consequences of increased late Cenozoic weathering rates and the global CO_2 balance since 100 Ma. *Paleoceanography* 11, 431-446.

McCracken, S.R., J.S. Compton, and K.S. Hicks. 1996. Sequence stratigraphic significance of glaucony-rich lithofacies at Site 903. In Miller, K.E., G. Mountain et al., eds., *Proceedings of the Ocean Drilling Program, Scientific Results*, 150: College Station , TX (Ocean Drilling Program), 171-188.

Hicks, K.S., J.S. Compton, S.R. McCracken, and A. Vecsei. 1996. Origin of diagenetic carbonate minerals recovered from the New Jersey continental slope. In Miller, K.E., G. Mountain et al., eds., *Proceedings of the Ocean Drilling Program, Scientific Results*, 150: College Station , TX (Ocean Drilling Program), 311-328.

Mallinson, D. J., and J. S. Compton. 1997. Linking phosphogenic episodes on the southeast U.S. margin to marine $\delta^{13}C$ and $\delta^{18}O$ records. *Geology* 25, 103-106.

Mallinson, D. J., and J. S. Compton. 1998. The influence of iron sulfide oxidation on the sulfur isotope analysis of Miocene phosphorites from Florida, USA. *Geochimica et Cosmochimica Acta* 62, 3689-3694.

Compton, J.S., Conrad, M.E., and Vennemann, T.W. 1999. Stable isotope evolution of volcanic ash layers during diagenesis of the Miocene Monterey Formation, California. *Clays and Clay Minerals* 47, 84-95.

Harris, C., Compton, J.S. and Bevington, S.A. 1999. Oxygen and hydrogen isotope composition of kaolinite deposits, Cape Peninsula, South Africa: low-temperature, meteoric origin. *Economic Geology* 94, 1353-1366.

de Villiers, S., Compton J.S., and Lavelle, M. 2000. The strontium isotope systematics of the Orange River, southern Africa. *South African Journal of Geology* 103, 237-248.

Compton, J.S. 2001. Holocene sea-level fluctuations inferred from the evolution of depositional environments of the southern Langebaan Lagoon salt marsh, South Africa. *The Holocene* 11, 395-405.

Compton, J.S., Harris, C., and Thompson, S. 2001. Pleistocene dolomite from the Namibian shelf: High $^{87}Sr/^{86}Sr$ and $\delta^{18}O$ values indicate an evaporative, mixed-water origin. *Journal of Sedimentary Research* 71, 800-808.

Compton, J.S., Mulabisana, J. and McMillan, I. 2002 Origin and age of phosphorite from the Last Glacial Maximum to Holocene transgressive succession off the Orange River, South Africa. *Marine Geology* 186, 243-261.

Publications - Articles in Refereed Journals (Continued)

Compton, J.S., White, R.A. and Smith, M. 2003. Rare Earth element behavior in soils and salt pan sediments of a semi-arid granitic terrain in the Western Cape, South Africa. *Chemical Geology* 201, 239-255.

Franceschini, G., Compton, J.S. and Wigley, R. 2003. Sand transport along the Western Cape coast: gone with the wind? *South African Journal of Science* 99, 317-318.

Smith, M. and Compton, J.S. 2004. Origin and evolution of major salts in the Darling Pans, Western Cape, South Africa. *Applied Geochemistry* 19, 645-664.

Compton, J.S., Wigley, R. and McMillan, I. 2004. Late Cenozoic phosphogenesis on the western shelf of South Africa in the vicinity of the Cape Canyon. *Marine Geology* 206, 19-40.

Franceschini, G. and Compton, J.S. 2004. Aeolian and marine deposits of the Tabakbaai Quarry area, Western Cape, South Africa. *South African Journal of Geology* 107, 619-632.

Compton, J.S. and Franceschini, G. 2005. Holocene geoarchaeology of the Sixteen Mile Beach barrier dunes in the Western Cape, South Africa. *Quaternary Research* 63, 99-107.

Franceschini, G., McMillan, I. and Compton, J.S. 2005. Foraminifera of Langebaan Lagoon salt marsh and their application to the interpretation of late Pleistocene depositional environments at Monwabisi, False Bay coast, South Africa. *South African Journal of Geology* 108, 285-296.

Compton, J.S. and Franceschini, G. 2005. Reply to discussion by DI Cole. *South African Journal of Geology* 108, 580-581.

Wigley, R. and Compton, J.S. 2006. Late Cenozoic evolution of the outer continental shelf at the Head of the Cape Canyon, South Africa. *Marine Geology* 226, 1-23.

Franceschini, G. and Compton, J.S. 2006. Holocene evolution of the Sixteen Mile Beach Complex, Western Cape, South Africa. *Journal of Coastal Research* 22, 1158-1166.

Compton, J.S. 2006. The mid-Holocene sea-level highstand at Bogenfels Pan on the southwest coast of Namibia. *Quaternary Research* 66, 303-310.

Orton, J. and Compton, J.S. 2006. A reworked mid-Holocene lithic assemblage at Dunefield Midden 1, Elands Bay, South Africa. *South African Archaeological Bulletin* 61, 90-95.

Compton, J.S., Franceschini, G. and Wigley, R. 2006. A proposed Neogene synthesis of the West Coast and West Coast Fossil Park. *African Natural History*, 2: 182-183 (Abstract).

Compton, J.S. 2007. Holocene evolution of the Anichab Pan on the southwest coast of Namibia. *Sedimentology* 54, 55-70.

Herbert, C. and Compton, J.S. 2007. Depositional environments of the lower Permian Dwyka diamictite and Prince Albert shale inferred from the geochemistry of early diagenetic concretions, southwest Karoo Basin, South Africa. *Sedimentary Geology* 194, 263-277.

Soderberg, K. and Compton, J.S. 2007. Dust as a nutrient source to the fynbos ecosystem, South Africa. *Ecosystems* 10, 550-561. DOI: 10.1007/s10021-007-9032-0.

Franceschini, G. and Compton, J.S. 2007. Abrasion of foraminifera tests along an active dune cordon, Western Cape, South Africa. *Palaios* 22, 686-690 (DOI: 10.2110/palo.2006.p.06-102r).

Wigley, R. A. and Compton, J.S. 2007. Oligocene to Holocene glauconite-phosphorite pellets from the Head of the Cape Canyon on the Western Margin of South Africa. *Deep-Sea Research II* 54, 1375-1395.

Compton, J.S. and Maake, L. 2007. Source of the suspended load of the upper Orange River, South Africa. *South African Journal of Geology* 110, 339-348.

Herbert, C. and Compton, J.S. 2007. Geochronology of Holocene sediments on the western margin of South Africa. *South African Journal of Geology* 110, 327-338.

Compton, J.S., Herbert, C., Schneider, R., 2008. Holocene organic-rich terrigenous mud on the western margin of South Africa: Nutrient source to the Southern Ocean? *Global Biogeochemical Cycles*, 23, GB4030; doi:10.1029/2008GB003427

Compton, J.S. and Wiltshire, J.G., 2009. Terrigenous sediment export from the western margin of South Africa on glacial/interglacial cycles. *Marine Geology* 266, 212-222. doi:10.1016/j.margeo.2009.08.013

Compton, J.S., Herbert, C., Hoffman, M.T., Schneider, R., Stuut, J-B., 2010. A tenfold increase in the Orange River mean Holocene mud flux: implications for soil erosion in South Africa. *The Holocene* 20, 115-122; DOI 10.1177:0959683609348860.

Compton, J.S., 2011. Pleistocene sea-level fluctuations and human evolution on the southern coastal plain of South Africa. *Quaternary Science Reviews* 30, 506-527.

Mauger, C. and Compton, J.S., 2011. Formation of modern dolomite in hypersaline pans of the Western Cape, South Africa. *Sedimentology* 58, 1678-1692 (DOI: 10.1111/j.1365-3091.2011.01229.x).

Abanda, P.A., Compton, J.S., Hannigan, R.E., 2011. Soil nutrient content, above-ground biomass and litter in a semi-arid shrubland, South Africa. *Geoderma* 164, 128-137.

Wigley, R. and Compton, J.S., 2012. Microstratigraphy of a Miocene layered phosphatic pebble from the western margin of South Africa. *Sedimentology* 60, 666-678. doi: 10.1111/j.1365-3091.2012.01355.x

Viglietti, P.A., Smith, R.M.H., Compton, J.S., 2013. Origin and palaeoenvironmental significance of Lystrosaurus bonebeds in the earliest Triassic Karoo Basin, South Africa, *Palaeogeography, Palaeoclimatology, Palaeoecology* 392, 9-21 (doi: 10.1016/j.palaeo.2013.08.015).

Brumfitt, I.M., Chinsamy, A., and Compton, J.S., 2013. Depositional environment and bone diagenesis of the Mio/Pliocene Langebaanweg bonebed, South Africa. *South African Journal of Geology*, 116, 241-258 doi:10.2113/gssajg.116.2.241.

Toms, J.A., Compton, J.S., Smale, M., van der Heyden, S., 2014. Variation in palaeo-shorelines explains contemporary population genetic patterns of rocky shore species. Biological Letters 10: 20140330. http://dx.doi.org/10.1098/rsbl.2014.0330

Cawthra, H.C., Bateman, M.D., Carr, A.S., Compton, J.S., Holmes, P.J., 2014. Understanding Late Quaternary change at the land-ocean interface: A synthesis of the evolution of the wilderness coastline, South Africa. *Quaternary Science Reviews* 99, 210-223.

Bergh, E.W., Compton, J.S., 2015. A one-year post-fire record of macronutrient cycling in a mountain sandstone fynbos ecosystem, South Africa. *South African Journal of Botany* 97, 48-58. http://dx.doi.org/10.1016/j.sajb.2014.11.010

Publications – Books

Compton, J.S., 2004. *The Rocks & Mountains of Cape Town*. Double Storey Books (Juta & Co.), Cape Town, South Africa, 112 p. (ISBN 978-1-919930-70-1) (second impression 2006). Third impression 2016 published by Earthspun Books, Cape Town, South Africa (ISBN 978-0-620-69617-3).

Compton, J.S., 2016. *Human Origins: How diet, climate and landscape shaped us*. Earthspun Books, Cape Town, South Africa, 400 p. (ISBN 978-0-620-69605-0).

Publications - Articles in Refereed Books

Compton, J. S. and R. Siever. 1984. Stratigraphy and Dolostone Occurrence in the Miocene Monterey Formation, Santa Maria Basin Area, California. In: Garrison, R. E., M. Kastner and D. H. Zenger, eds., *Dolomites of the Monterey Formation and Other Organic-Rich Units*: Pacific Section SEPM Special Publication 41, 141-153.

Compton, J. S. 1988. Sediment composition and precipitation of dolomite and pyrite in the Neogene Monterey and Sisquoc Formations, Santa Maria basin area, California. In: Shukla, V. and P. A. Baker, eds., *Sedimentology and Geochemistry of Dolostones*. SEPM Special Publication Number 43, 53-64.

Snyder, S. W., M. W. Evans, A. C. Hine and J. S. Compton. 1989. Seismic expression of solution collapse features from the Florida Platform. In: B. F. Beck, ed., *Engineering and Environmental Impacts of Sinkholes and Karst*, Proceedings of the Third Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst, St. Petersburg Beach, Florida, 2-4 October 1989. A. A. Balkema, Rotterdam/Brookfield, pp. 281-298.

Sackett, W. M., Z. Li and J. S. Compton. 1994. Pyrolysis-carbon-isotope method: Alternative to vitrinite reflectance as kerogen maturity indicator. In: Mukhopadhyay, P. K., and W. G. Dow., eds., *Vitrinite Reflectance as a maturity parameter: Applications and limitations*. American Chemical Society (Washington, DC) Symposium 570: 206-213.

Mallinson, D. J., and J. S. Compton. 1995. Mixed carbonate-siliciclastic sequence stratigraphy utilizing strontium isotopes: Deciphering the Miocene sea-level history of the Florida Platform. In: Haq, B.U., ed., *Sequence Stratigraphy and Depositional Response to Eustatic, Tectonic and Climatic Forcing*, Kluwer, Dordrecht, The Netherlands, 25-54.

Compton, J. S. 1997. Origin, age, and paleoceanographic significance of Florida's phosphorite deposits. In: Randazzo, A.F. and Jones, D., eds., *The Geology of Florida*. University Press of Florida, Gainesville, Florida, 195-216.

Compton, J.S., Mallinson, D. J., Glenn, C.R., Filippelli, G., Follmi, K., Shields, G., and Zanin, Y. 2000. Variations in the global phosphorus cycle. In: Glenn, C.R. et al., eds., *Marine Authigenesis: From global to microbial*. Society of Sedimentary Geology, Special Publication Number 66, 21-33.

Werz, B., Cawthra, H., Compton, J.S., 2014. Recent developments in African offshore prehistoric archaeologtical research, with an emphasis on South Africa. In: A.M. Evans, J.C. Flatman and N.C. Flemming (Eds), *Prehistoric archaeology on the continental shelf: A global review*. Springer, 233-254.

Cawthra, H.C., Compton, J.S., Fisher, E.C., MacHutchon, M.R., Marean, C.W., 2015. Submerged shorelines and landscape features offshore of Mossel Bay, South Africa. In: Harff, J., Bailey, G. & Lüth, F. (eds) Geology and Archaeology: Submerged Landscapes of the Continental Shelf. Geological Society, London Special Publications, 411, http://doi.org/10.1144/SP411.11.

Meadows, M.E. and Compton, J.S., 2015. Table Mountain: Wonder of Nature at the Foot of Africa. In: S. Grab and J. Knight (eds.), Landscapes and Landforms of South Africa,World Geomorphological Landscapes, Springer.

Compton, J.S., 2016. Quaternary environmental change on the southern African coastal plain. In: J. Knight and S. Grab (Eds) *Quaternary environmental change in southern Africa: Physical and human dimensions*. Cambridge University Press, 88-98.