

**GREGORY E. RAVIZZA**, Paleoceanographer/Geochemist  
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### **Education**

Ph.D. Geology, Yale University, Rhenium and Osmium Geochemistry of Modern and Ancient Organic-rich Sediments (May 1991), Advisor: Karl K. Turekian  
B.A. Chemistry with specialization in Earth Science, Mathematics Minor, UCSD (June 1984)

### **Professional Experience**

Associate Professor, G&G, UH Manoa	June 2006 to Present
Assistant Professor, G&G, UH Manoa	Aug. 2002 to June 2006
Associate Scientist WHOI, Woods Hole MA	Oct 1996 to July 2002
Assistant Scientist WHOI, Woods Hole MA	Oct. 1992 to Oct. 1996
Postdoctoral Investigator, WHOI, Woods Hole MA	Oct. 1991 to Oct. 1992
Supervisor: Stan Hart	
Postdoctoral Fellowship, WHOI, Woods Hole, MA	Oct. 1990 to Sept. 1991
Co-sponsors: Mike Bacon, Stan Hart and Nobu Shimizu	

### **Research Interests**

- Trace element and isotope geochemistry of modern and ancient sediments, with emphasis on osmium isotopes and platinum group elements.
- Catastrophic events in Earth History, in particular extraterrestrial impact events.
- Chemical evolution of the atmosphere and ocean.

### **Teaching Activities UH Manoa 2016 to present**

ERTH (GG) 102/SUST 113 (3 Cr, FQ): Fall 18, Sp 19, Fall 19, Sp 21 (new 2018)  
ERTH (GG) 200 (3 Cr, W focus): Fall 16, Sp 17, Sp 18, Sp 20, Sp 21\*  
ERTH (GG) 407 (3 Cr, W focus – starting 2020): Fall 17, Fall 20, Fall 21  
ERTH (GG) 410 (2 Cr, E focus & O focus): Fall 17, Fall 18, Fall 19, Fall 20, Fall 21  
ERTH 611 (3 Cr, Team Taught): Fall 2019 (3 weeks), Fall 20 (2 weeks)  
\* Assist with grading of W focus work – not instructor.

**Publications – 2009 to present** (\* indicates student or post-doctoral investigator who worked in my lab.) See also Google Scholar Profile:

[https://scholar.google.com/citations?hl=en&user=8n-idRwAAAAJ&view\\_op=list\\_works](https://scholar.google.com/citations?hl=en&user=8n-idRwAAAAJ&view_op=list_works)

Hull, P. M., A. Bornemann, D. E. Penman, M. J. Henehan, R. D. Norris, P. A. Wilson, P. Blum, L. Alegret, S. J. Batenburg, P. R. Bown, T. J. Bralower, C. Cournede, A. r Deutsch, B. Donner, O. Friedrich, S. Jehle, H. Kim, D. Kroon, P. C. Lippert, D. Loroche, I. Moebius, K. Moriya, D. J. Peppe, G. E. Ravizza, U. Röhl, J. D. Schueth, J. Sepúlveda, P. F. Sexton, E. C. Sibert, K. K. Śliwińska, R. E. Summons, E. Thomas, T. Westerhold, J. H. Whiteside, T. Yamaguchi, J. C. Zachos, 2020. On impact and volcanism across the Cretaceous-Paleogene boundary. *Science*, 367(6475), pp.266-272.

- Peucker-Ehrenbrink, B. and Ravizza, G.E., 2020. Osmium isotope stratigraphy. In *Geologic Time Scale 2020* (pp. 239-257). Elsevier.
- Choi, S.H., Mukasa, S.B., Ravizza, G., Fleming, T.H., Marsh, B.D. and Bédard, J.H., (2019) Fossil subduction zone origin for magmas in the Ferrar Large Igneous Province, Antarctica: Evidence from PGE and Os isotope systematics in the Basement Sill of the McMurdo Dry Valleys. *Earth and Planetary Science Letters*, 506:507-519.
- Peucker-Ehrenbrink, B., Ravizza, G. and Winckler G. (2016) Geochemical tracers of extraterrestrial matter in sediments. *Elements* 12.3: 191-196.
- Paquay\*, F. S., Ravizza, G. and Coccione, R. (2014) The influence of extraterrestrial material on the late Eocene marine Os isotope record." *Geochimica et Cosmochimica Acta* 144: 238-257.
- Schmitz, B., Huss, G.R. , Meier, M.M.M. , Peucker-Ehrenbrink, B., Cronholm, A. , Davies, M.B., Heck, P.R., Johansen, A., Keil, K., Kristiansson, P., Ravizza, G., Tassinari, M., and Terfelt, F. (2014) A fossil winonaite-like meteorite in Ordovician limestone: A piece of the impactor that broke up the L-chondrite parent body? *Earth and Planetary Science Letters*. 400, 145-152.
- Zaiss\*, J., Ravizza, G., Goderis, S., Sauvage, J., Claeys, P. and Johnson, K. (2014). "A complete Os excursion across a terrestrial Cretaceous–Paleogene boundary at the West Bijou Site, Colorado, with evidence for recent open system behavior." *Chemical Geology* 385: 7-16.
- Goderis, S., Wittmann, A., Zaiss\*, J., Elburg, M., Ravizza, G, Vanhaecke, F., Deutsch, A. and Claeys, P. (2013) Testing the ureilite projectile hypothesis for the El'gygytgyn impact: Determination of siderophile element abundances and Os isotope ratios in ICDP drill core samples and melt rocks. *Meteoritics & Planetary Science*. 48, 1296-1324.
- Wieczorek\*, R., Fantle, M. S., Kump L. R. and Ravizza G. (2013). Geochemical evidence for volcanic activity prior to and enhanced terrestrial weathering during the Paleocene Eocene Thermal Maximum. *Geochimica et Cosmochimica Acta* 119: 391-410.
- Ravizza G. and Vonderhaar, D. (2012) A geochemical clock in earliest Paleogene pelagic carbonates based on the impact-induced Os isotope excursion at the Cretaceous-Paleogene Boundary. *Paleoceanography*. 27 15pp PA3219 doi:10.1029/2012PA002301.
- Paquay\* F. S. and Ravizza G. (2012) Heterogeneous seawater  $^{187}\text{Os}/^{188}\text{Os}$  during late Pleistocene Glaciations. *Earth and Planetary Science Letters*. 349/350, 126-138.
- Tejada, M. Ravizza G., Suzuki, K. and Paquay F.,(2012) An extraterrestrial trigger for the Early Cretaceous massive volcanism? Evidence from the paleo-Tethys Ocean *Scientific Reports*, Volume: 2 Article Number: 268 DOI: 10.1038/srep00268.
- B. Peucker-Ehrenbrink, and G. Ravizza "The marine Osmium isotope record" chapter 8; , in *The Geologic Time Scale*, F. M. Gradstein, J. G. Ogg, M. D. Schmitz, Eds. (Cambridge Univ. Press, Cambridge, 2012), 10.1016/B978-0-444-59425-9.00008-1.
- Nozaki T.; Suzuki, K.; Ravizza, G. Kimura, J-I; Chang, Q. (2012) A Method for Rapid Determination of Re and Os Isotope Compositions Using ID-MC-ICP-MS Combined with the Sparging Method. *Geostandards And Geoanalytical Research* 36, 131-148.
- Dalai\*, T. K. and Ravizza, G. (2010) Investigation of an early Pleistocene marine Os isotope record from the eastern equatorial Pacific. *Geochimica et Cosmochimica Acta* 74, 4332-4345.

Schulte and 41 others including Ravizza (2010) The Chicxulub asteroid impact and mass extinction at the Cretaceous-Paleogene boundary. *Science* 327, 1214-1218.

\*Paquay, F. S., Goderis, S., Ravizza, G., Vanhaeck, F., Boyd, M., Surovell, T. A., Holliday, V. T., Haynes Jr., C. V., and Claeys, P. (2009) Absence of geochemical evidence for an impact event at the Bolling-Allerod/Younger Dryas transition. *PNAS* 106, 21505-21510

\*Robinson, N., Ravizza, G., Coccioni, R., Peucker-Ehrenbrink, B., and Norris, R., (2009), A high-resolution marine osmium isotope record for the late Maastrichtian: distinguishing the chemical fingerprints of the Deccan and KT impactor. *Earth Planetary Science Letters* 281, 159-168.

### **Invited Presentations and seminars last five years**

Yale University, Department of Geology & Geophysics (New Haven, CT, April 2016), Highly Siderophile Elements Conference (Durham, UK July, 2016), University of Southern California (Los Angeles, CA, March 2018)

### **Professional Activities and Service – Past 5 years**

Member E Board (UHM General Education Office Board for the evaluation of ethics focus proposals). 2019 to 6/2021.

Departmental Undergraduate Academic Advisor 2013-present

Journal Reviewer/Referee: *Nature*, *Science*, *Earth and Planetary Science Letters*, *Geochimica et Cosmochimica Acta*, *PNAS*

Proposal Reviewer/Referee: NSF Ocean Sciences Division Chemical Oceanography, and Marine Geology and Geophysics; NSF Earth Sciences Division Geology and Paleontology, and Instrumentation and Facilities, NERC

### **Student Advising– Past 10 years**

**UH Undergraduate:** Departmental Undergraduate Academic Advisor 2013-present

**Former UH Graduate Students:** Allison Kreider (MGeo, 2019), Karl Gerstnecker (MGeo, 2018), Nicole Robinson (MS, 2016), Jess Zaiss-Bowman (MS, 2014), Francois Paquay (Ph.D., 2011)

### **Student Committee Service– Past 5 years**

**UH Manoa Thesis/Dissertation Committees:** Kate Herries (M.S. Geology & Geophysics, 2018), Caroline Kaplan (Ph.D. Geology & Geophysics, 2020)

**UH Manoa Exam Committees:** Caroline Kaplan (2016), Chris Shuler (2017), Brytne Okuhata (2018), David Frank (2018), Diamond Tachera (2019), Kelly McCartney (2021) Luis Dasilveira (Current).

### **Research Funding**

- Acquisition of a multi-collector ICP-MS for Marine and Terrestrial Geochemical Research (Rubin, PI; Ravizza, Mahoney, Pyle, DeCarlo co-PIs) NSF EAR \$700,000; 03/01/06- 02/28/09.
- Collaborative Research: The marine Os isotope record of extreme Cenozoic climates. (Ravizza and Peucker-Ehrenbrink (WHOI) co-PIs) NSF OCE \$194,759 (UH portion); 08/01/05- 07/31/09.
- Collaborative Research: Intercalibrating Analytical Methods for Osmium Isotopes and Concentrations in Seawater. (Peucker-Ehrenbrink (WHOI), Sharma (Dartmouth), Ravizza (UH) co-PIs) NSF OCE \$27,902 (UH portion); 07/01/08- 06/30/10.
- A Refined Chronology of Late Eocene to Late Oligocene Coral Reefs: Implications for Coral Calcification Under a Regime of Declining Atmospheric Carbon Dioxide and Changing Ocean (Ravizza, PI) American Chemical Society Petroleum Research Fund \$150,000; 02/01/08- 08/31/12.
- Technician Support for a new multi-collector ICP-MS facility for Terrestrial and Marine Geochemical Research. (Rubin PI, Mahoney, Ravizza Co-PI NSF EAR); 04/15/09- 03/31/12. \$60,000
- The response of the marine osmium isotope record to impact events. (Ravizza, PI) NSF EAR \$199,987; 04/01/09- 03/31/13.
- Collaborative Research: He and Os isotope investigation of Miocene marine sediments: particulate extraterrestrial matter as a paleoflux tracer (Ravizza, PI, collaborative with Ken Farley at Cal Tech) NSF-OCE, \$170,890; 06/01/11 – 05/31/13.
- Additional support through donations to the UH foundation from Shell Exploration and Production. \$100,00 (2014-2017)