

Cumulative Bio-Bibliography  
University of California, Santa Cruz

James C. Zachos  
Professor  
Earth & Planetary Sciences  
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## EMPLOYMENT HISTORY

July 2017 – Present	Chair, Department of EPS, UCSC
December 2009 – June 2010	Acting Provost, Crown College, UCSC
July 2000 - Present	Professor, Univ. of California, Santa Cruz
March 2003-May 2003	Chief Scientist, ODP Leg 208
August 2001-October 2001	Sedimentologist, ODP Leg 198
July 1999 – 2003	Director, Center DELSI
July 1996 – June 2000	Associate Professor, Univ. of California, Santa Cruz
July 1992 - June 1996	Assistant Professor, Univ. of California, Santa Cruz
January 1994 - March 1994	Sedimentologist, ODP Leg 154
November 1990 - June 1992	Assistant Research Scientist, Univ. of Michigan
September 1988 - November 1990	Post Doctoral Scholar, Univ. of Michigan
February 1988 - May 1988	Organic Geochemist, ODP Leg 120
September 1987 - September 1988	JOIDES/USSAC Fellow
August 1985 - October 1985	Inorganic Geochemist, ODP Leg 105
September 1983 - August 1987	Graduate Research Assistant, Univ. of Rhode Island
January 1982 -August 1983	Graduate Teaching Assistant, Univ. of South Carolina

## EDUCATION

Ph.D. 1988 Graduate School of Oceanography, University of Rhode Island  
M.S. 1984 University of South Carolina  
B.S. 1981 State University of New York, Oneonta

## PROFESSIONAL COMPETENCE AND ACTIVITY

### Honors, Awards

June 2018	Ida Benson Chair in Ocean Health
June 2018	Royal Netherlands Academy of Arts & Sciences, Member
May 2017	National Academy of Sciences, Member
April 2016	European Geosciences Union, Milutin Milankovic Medal
Oct 2014	ISI Highly Cited Researcher, Geosciences
Mar 2014	Chauncey D. Holmes Lecture, Syracuse University
Oct 2011	Univ. Rhode Island, Distinguished Achievement Award
June 2011	California Academy of Sciences, Fellow
April 2011	American Academy of Arts & Sciences, Fellow
May 2008	Humboldt Research Award
February 2008	American Geophysical Union, Fellow
Spring 2007	USSSP Distinguished Lecturer
December 2006	American Geophysical Union, <i>Emiliani Lecture</i>
March 2005	CIRES Distinguished Lecture, University of Colorado
Oct 2004	Henry Charnock Lecture, Southampton University
July 2004	Bremen University Visiting Fellow
May 2004	Geological Society of America, Fellow
February 2004	Vetlesen Distinguished Lecture, Univ. Rhode Island
Fall 2000	Cambridge University, Visiting Fellow
August 1994	National Young Investigator
June 1993	JOI-USSAC Distinguished Lecturer

## PUBLISHED WRITINGS AND CREATIVE ACTIVITIES

## Articles in Professional Journals (total citations ISI 20,000; h-index 63, as of 1-June-2019)

- 169 Lyons, S. L., Baczynski, A. A., Babila, T. L., Bralower, T. J., Hajek, E. A., Kump, L. R., Polites, E. G., Self-Trail, J. M., Trampush, S. M., Vornlocher, J. R., Zachos, J. C., and Freeman, K. H., 2019, Palaeocene–Eocene Thermal Maximum prolonged by fossil carbon oxidation: *Nature Geoscience*, v. 12, no. 1, p. 54-60. DOI:10.1038/s41561-018-0277-3.
- 168 Barnet, J. S.K., Littler, K., Westerhold, T., Kroon, D., Leng, M. J., Bailey, I., Rohl, U., & Zachos, J.C. 2019. A high - Fidelity benthic stable isotope record of late Cretaceous–early Eocene climate change and carbon - cycling. *Paleoceanography and Paleoclimatology*, 34.
- 167 Hupp, B.N., Kelly, D.C., Zachos, J.C., and Bralower, T.J., 2019, Effects of size-dependent sediment mixing on deep-sea records of the Paleocene-Eocene Thermal Maximum: *Geology*.
- 166 Westerhold, T., U. Röhl, B. Donner, J.C. Zachos, 2018, Global Extent of Early Eocene Hyperthermal Events - a new Pacific Benthic Foraminiferal Isotope Record from Shatsky Rise (ODP Site 1209). *Paleoceanography and Paleoclimatology*, doi.org/10.1029/2017PA003306
- 165 Kiehl, J.T., C.A Shields, M. A. Snyder, J. C Zachos and M. Rothstein, 2018. Greenhouse and Orbital Forced Climate Extremes during the Early Eocene, *Phil. Trans. R. Soc. A*. DOI:10.1098/rsta/376/2130
- 164 Babila, T., D. E. Penman, B. Hönisch, D. C. Kelly, T. J. Bralower, Y. Rosenthal and J. C. Zachos, 2018, Capturing the global signature of surface ocean acidification during the Paleocene-Eocene Thermal Maximum. *Phil. Trans. R. Soc. A*. DOI:10.1098/rsta/376/2130
- 163 Penman, D.E., and Zachos, J.C., 2018, New constraints on massive carbon release and recovery processes during the Paleocene-Eocene Thermal Maximum. *Environmental Research Letters*. v. 13, <https://doi.org/10.1088/1748-9326/aae285>
- 162 Lauretano, V., J. C. Zachos, L. J. Lourens, 2018, Orbitally Paced Carbon and Deep-Sea Temperature Changes at the Peak of the Early Eocene Climatic Optimum. *Paleoceanography and Paleoclimatology*, v.33. <https://doi.org/10.1029/2018PA003422>.
- 161 Bralower, T.J., L. R. Kump, J. M. Self - Trail, M. M. Robinson, S. Lyons, Tali Babila, E. Ballaron, K. H. Freeman, E. Hajek, W. Rush, J. C. Zachos, 2018, Evidence for Shelf Acidification during the Onset of the Paleocene - Eocene Thermal Maximum. *Paleoceanography and Paleoclimatology*, doi: 10.1029/2018PA003382.
- 160 Coxall, H.K., Huck, C., M. Huber, C. H. Lear, A. Legarda-Lisarrri; M. O'Regan1, K. Sliwinska7,8, T. van de Flierdt2, A. M. de Boer1, J. C. Zachos, J. Backman, 2018, Export of nutrient-rich Northern Component Water preceded early Oligocene Antarctic glaciation. *Nature Geosciences*; DOI:10.1038/s41561-018-0069-9.
- 159 Vahlenkamp, M., I. Niezgodzki, D. De Vleeschouwer, T. Bickert, D. Harper, S. Kirtland Turner, G. Lohmann, P. Sexton, J. C. Zachos, H. Pälike, 2018, Astronomically Paced Changes in Deep-Water Circulation in the Western North Atlantic during the Middle Eocene. *Eart. Planet. Sci. Lett.* 484; 329–340.
- 158 Barnet, J., Littler, K., D. Kroon, M. J. Leng, T. Westerhold, U. Röhl and J. C. Zachos, 2017, A new high-resolution chronology for the late Maastrichtian warming event: Establishing robust temporal links with the onset of Deccan volcanism. *Geology*, DOI: <https://doi-org.oca.ucsc.edu/10.1130/G39771.1>
- 157 Harper, D.T., R. Zeebe, B. Hönisch, C. Schrader, L. J. Lourens, J.C. Zachos, 2017, Subtropical sea surface warming and increased salinity during Eocene Thermal Maximum 2. *Geology*, DOI: <https://doi-org.oca.ucsc.edu/10.1130/G39658.1>
- 156 Westerhold, T., U. Röhl, T. Frederichs, C. Agnini, I. Raffi, J.C. Zachos, and R.H. Wilkens, 2017, Astronomical calibration of the Ypresian timescale: implications for seafloor spreading rates and the chaotic behavior of the solar system? *Clim. Past*, 13, 1129-1152,
- 155 Tierney, J., J.S. Sinninghe Damsté, R. D. Pancost, A. Sluijs & J. C. Zachos, 2017, Eocene temperature gradients. *Nature Geoscience*, v.10, n.8, p. 538-539, doi:10.1038/ngeo2997

- 154 Zeebe, R., T. Westerhold, K. Littler, J.C. Zachos, 2017, Orbital forcing of the Paleocene and Eocene carbon cycle. *Paleoceanography*, v.32 iss.5, p. 440-465, doi: 10.1002/2016PA003054
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- 144 Hollis, C.J., B. R. Hines, K. Littler, V. Villasante-Marcos, D. K. Kulhanek, C. P. Strong, J. C. Zachos, S. M. Eggins, L. Northcote, and A. Phillips, 2015, The Paleocene-Eocene Thermal Maximum at DSDP Site 277, Campbell Plateau, southern Pacific Ocean. *Clim. Past Discuss.*, 11, 243-278, 2015 [www.clim-past-discuss.net/11/243/2015/](http://www.clim-past-discuss.net/11/243/2015/) doi:10.5194/cpd-11-243-2015.
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- 141 Oster, J.L., I. P. Montañez, R. Mertz-Kraus, W. D. Sharp, G. M. Stock, H. J. Spero, J. Tinsley, J. C. Zachos, 2014, Millennial-scale variations in western Sierra Nevada precipitation during the last glacial cycle MIS 4/3 transition. *Quaternary Res.*, 82: 236-248.
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- 139 Penman, D. E. , B. Hönisch, R.E. Zeebe, E. Thomas, & J. C. Zachos, 2014, Rapid and sustained surface ocean acidification during the Paleocene-Eocene Thermal Maximum. *Paleoceanography*, 29, doi:10.1002/2014PA002621.

- 138 Littler, K., U. Rohl, T. Westerhold, and J.C. Zachos, 2014, A high-resolution benthic stable-isotope record for the South Atlantic: Implications for orbital-scale changes in Late Paleocene–Early Eocene climate and carbon cycling. *Earth Planet. Sci. Lett.* 401:18-30.
- 137 Pälike, C., M. L. Delaney, and J. C. Zachos, 2014, Deep-sea redox across the Paleocene-Eocene thermal maximum, *Geochem. Geophys. Geosyst.*, 15, doi:10.1002/2013GC005074.
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- 134 Zeebe, R., and J.C. Zachos, 2013, Long-term legacy of massive carbon input to the Earth system: Anthropocene vs. Eocene. *Phil. Trans. R. Soc. A - Issue 371*: 20120006. <http://dx.doi.org/10.1098/rsta.2012.0006>.
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- 132 Rohling, E., & Paleosense Project Members., 2012, Making sense of palaeoclimate sensitivity. *Nature*, 491, 683-691: doi:10.1038/nature11574.
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- 130 Larrasoana, J.C., A.P. Roberts, L. Chang, S.A. Schellenberg, J.D. Fitz Gerald, R.D. Norris, and J.C. Zachos, 2012, Magnetotactic bacterial response to Antarctic dust supply during the Palaeocene-Eocene thermal maximum. *Earth Planet. Sci. Lett.*, v. 333, p. 122-133 DOI: 10.1016/j.epsl.2012.04.003.
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- 128 Hollis, C.J., K.W.R. Taylor, L. Handley, R.D. Pancost, M. Huber, J.B. Creech, B. Hines, E.M. Crouch, H.E.G. Morgans, J.S. Crampton, S. Gibbs, S. Schouten, P.N. Pearson, and J.C. Zachos, 2012, Early Paleogene temperature history of the Southwest Pacific Ocean: Reconciling proxies and models. *Earth Planet. Sci. Lett.*, V. 349–350, p. 53–66.
- 127 John, C., N. R. Banerjee, F. J. Longstaffe, C. Sica, K. R. Law, and J. C. Zachos, 2012, Clay assemblage and oxygen isotopic constraints on the weathering response to the Paleocene-Eocene thermal maximum, east coast of North America. *Geology*, v. 40, p. 591-594, doi:10.1130/G32785.1 .
- 126 Sluijs, A., J.C. Zachos, R.E. Zeebe, 2012, Constraints on hyperthermals. *Nat. Geoscience*, v. 5, p.230, DOI: 10.1038/ngeo1423.
- 125 Hönisch, B., and others, 2012, The Geological Record of Ocean Acidification. *Science* 335, 1058, DOI: 10.1126/science.1208277 .
- 124 Bohaty, S.M., M.L. Delaney, J.C. Zachos, 2012, Foraminiferal Mg/Ca Evidence for Southern Ocean Cooling across the Eocene-Oligocene Transition. *Earth Planet. Sci. Lett.*, v. 317-318, Pages 251-261
- 123 Lunt, D., A. Ridgwell, A. Sluijs, J. Zachos, S. Hunter, and A. Haywood, 2011, A model for orbital pacing of methane hydrate destabilization during the Palaeogene. *Nature Geoscience*. v. 4, p. 775-778. DOI: 10.1038/NNGEO1266
- 122 Brown, R.E, L. Anderson, E. Thomas, and J.C. Zachos, 2011, A core-top calibration of B/Ca in the benthic foraminifers *Nuttallides umbonifera* and *Oridorsalis umbonatus*: A proxy for Cenozoic bottom water carbonate saturation. *Earth Planet. Sci. Lett.* v. 310, p. 360-368. doi:10.1016/j.epsl.2011.08.023
- 121 Westerhold, T., U. Röhl, B. Donner, H. K. McCarren, J. C. Zachos, 2011, A complete high-resolution Paleocene benthic stable isotope record for the central Pacific (ODP Site 1209). *Paleoceanography* 26, PA2216, doi:10.1029/2010PA002092.

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- 119 Bowen, G.J. and J.C. Zachos, 2010, Rapid carbon sequestration at the termination of the Paleocene-Eocene thermal maximum. *Nature Geosciences*. doi:10.1038/ngeo1014.
- 118 Zachos, J. C., H. McCarren, B. Murphy, U. Röhl, T. Westerhold, 2010, Tempo and Scale of Late Paleocene and Early Eocene Carbon Isotope Cycles: Implications for the Origin of Hyperthermals 2. *Earth Planet. Sci. Lett.* 299, 242–249.
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- 115 Murphy, B.H., Farley, K.A., Zachos, J.C., 2010, An extraterrestrial <sup>3</sup>He-based timescale for the Paleocene-Eocene thermal maximum (PETM) from Walvis Ridge, IODP Site 1266. *Geochimica et Cosmochimica Acta*, v. 74, p. 5098-5108.
- 114 Kelly, D.C., T.M.J. Nielsen, H. K. McCarren, J. C. Zachos, and U. Röhl, 2010, Spatiotemporal patterns of carbonate sedimentation in the South Atlantic: Implications for carbon cycling during the Paleocene–Eocene thermal maximum. *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 293, p. 30-40.
- 113 Galeotti S, S. Krishnan, M. Pagani , L. Lanci, A. Gaudio, J.C. Zachos, S. Monechi, G. Morelli, L. Lourens, 2010, Orbital chronology of Early Eocene hyperthermals from the Contessa Road section, central Italy. *Earth & Planetary Science Lett.*, v. 290, p. 192-200.
- 112 T. Westerhold, U. Röhl, H. K. McCarren, J. C. Zachos, 2009, Latest on the absolute age of the Paleocene–Eocene Thermal Maximum (PETM): New insights from exact stratigraphic position of key ash layers +19 and –17. *Earth and Planet. Sci. Lett.* v.287, p. 412–419.
- 111 Bijl, P., S. Schouten , H. Brinkhuis , A. Sluijs , G.-J. Reichart , J.C. Zachos, 2009, Palaeogene temperature evolution of the Southwest Pacific Ocean, *Nature*, Vol 461 | 8 October 2009 | doi:10.1038/nature08399
- 110 Zeebe, R.E., J.C. Zachos & G.R. Dickens, 2009, Carbon dioxide forcing alone insufficient to explain Palaeocene–Eocene Thermal Maximum warming. *Nature*, doi:10.1038/ngeo578.
- 109 Bohaty, S.M., J. C. Zachos, F. Florindo, & M. L. Delaney, 2009, Coupled Greenhouse Warming and Deep Sea Acidification in the Middle Eocene, *Paleoceanography*, doi:10.1029/2008PA001676.
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- 107 Raffi, I., J. Backman, J. C. Zachos, and A. Sluijs, 2009, The Response of Calcareous Nannofossil Assemblages to the Paleocene-Eocene Thermal Maximum at the Walvis Ridge in the South Atlantic. *Mar. Micropaleontology*, doi:10.1016/j.marmicro.2009.12.005.
- 106 McCarren, H., E. Thomas, T. Hasegawa, U. Röhl, and J.C. Zachos, 2008, Depth dependency of the Paleocene-Eocene carbon isotope excursion: Paired benthic and terrestrial biomarker records (Ocean Drilling Program Leg 208, Walvis Ridge), *Geochem. Geophys. Geosyst.*, 9, Q10008, doi:10.1029/2008GC002116.
- 105 Zeebe, R.E., J. C. Zachos, K. Caldeira, T. Tyrrell, 2008, Carbon Emissions and Acidification. *Science*, 321, p.51-52, DOI: 10.1126/science.1159124.
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- 103 Hansen, J., M.K. Sato, P. Kharecha, D. Beerling, R. Berner, V. Masson-Delmotte, M. Pagani, M. Raymo, D.L. Royer, and J.C. Zachos, 2008: Target atmospheric CO<sub>2</sub>: Where should humanity aim? *Open Atmos. Sci. J.*, 2, 217-231, doi:10.2174/1874282300802010217.

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