

## EDUCATION

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- 2013** Ph.D., University of California, Riverside | Geological Science | Advisor – Timothy W. Lyons  
**2010** M.S., University of California, Riverside | Geological Science | Advisor – Timothy W. Lyons  
**2006** B.S., University of California, Riverside | Environmental Science

## PROFESSIONAL EXPERIENCE

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- 2020-present Associate Professor, Department of Earth, Ocean and Atmospheric Science | National High Magnetic Field Laboratory, Florida State University  
2015-2020 Assistant Professor, Department of Earth, Ocean and Atmospheric Science | National High Magnetic Field Laboratory, Florida State University  
2013-2015 Agouron Postdoctoral Fellow, Geology and Geophysics Department, Woods Hole Oceanographic Institution | Mentor – Sune Nielsen  
2007-2013 Research and Teaching Graduate Assistant, Department of Earth Sciences, University of California, Riverside  
2011 Lecturer, Department of Earth Sciences, University of California, Riverside  
2006-2007 Research Specialist Department of Earth Sciences, University of California, Riverside | Silke Severmann

## AWARDS AND FELLOWSHIPS (SINCE 2014)

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- 2020 SLOAN Research Foundation Fellow  
2019 ICDP Deep Dust Drilling  
2015 Marine Geosciences Leadership Fellow  
2014 NNOCCI Science Fellow

## PEER-REVIEWED PUBLICATIONS (ANNUAL TOTAL)

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(\*) Primary advisor or mentor

### BOOK CHAPTERS

#### **2021 (1)**

002. B Kendall, MB Andersen, and **JD Owens** (2020) Assessing the Effect of Large Igneous Provinces on Global Oceanic Redox Conditions Using Non-traditional Metal Isotopes (Molybdenum, Uranium, Thallium), *In Large Igneous Provinces* (eds R.E. Ernst, A.J. Dickson and A. Bekker), doi: 10.1002/9781119507444.ch13

#### **2020 (1)**

001. **JD Owens** (2020) Application of thallium isotopes: tracking marine oxygenation through manganese oxide burial, *Geochemical Traces in Earth System Science*, doi: 10.1017/9781108688697

### JOURNALS

#### **2021 (7)**

058. AH Caruthers, SM Marroquín, DR Gröcke, M Golding, M Aberhan, TR Them II, JP Trabucho-Alexandre, YP Veenma, **JD Owens**, CA McRoberts, RM Friedman, J Trop, D Szűcs, J Pálffy, and BC Gill (accepted) New evidence from a Panthalassan section (Wrangell Mountains, Alaska) for long duration of Rhaetian Stage and regional differences in carbon cycle perturbations at the Triassic-Jurassic transition, *Earth and Planetary Science Letters*

057. CN Bowman, TR Them II, MD Knight, D Kaljo, ME Eriksson, O Hints, T Martma, **JD Owens**, and SA Young (2021) A multi-proxy approach to constrain reducing conditions in the Baltic Basin during the late Silurian Lau carbon isotope excursion, *Palaeogeography, Palaeoclimatology, Palaeoecology*, doi.org/10.1016/j.palaeo.2021.110624
056. Z Li, DB Cole, SM Newby\*, **JD Owens**, B Kendall, and CT Reinhard (2021) New constraints on mid-Proterozoic ocean redox from stable thallium isotope systematics of black shales, *Geochimica et Cosmochimica Acta*, doi.org/10.1016/j.gca.2021.09.006
055. SM Newby\*, **JD Owens**, SD Schoepfer, and TJ Algeo (2021) Transient ocean oxygenation at end-Permian mass extinction onset shown by thallium isotopes, *Nature Geoscience*, doi.org/10.1038/s41561-021-00802-4
054. ST Rader, RM Gaschnig, SM Newby, GE Bebout, MJ Mirakian, and **JD Owens** (2021) Thallium behavior during high-pressure metamorphism in the Western Alps, Europe, *Chemical Geology*
053. RM Gaschnig, ST Rader, CT Reinhard, **JD Owens**, NJ Planavsky, X Wang, D Asael, A Greaney, and R Helz (2021) Behavior of the Mo, Tl, and U isotope systems during differentiation in the Kilauea Iki lava lake, *Chemical Geology*, doi: 10.1016/j.chemgeo.2021.120239
052. S Goderis, H Sato, L Ferrière, B Schmitz, D Burney, P Kaskes, J Vellekoop, A Wittmann, P Claeys, SJ de Graaff, T Déhais, NJ de Winter, M Elfman, J-G Feignon, A Ishikawa, C Koeber, P Kristiansson, CR Neal, **JD Owens**, T Schulz, M Sinnesael, F Vanhaecke, SJM Van Malderen, TJ Bralower, SPS Gulick, CM Lowery, JV Morgan, J Smit, MT Whalen, and the IODP-ICDP Expedition 364 Scientists (2021) Globally distributed iridium layer preserved within the Chicxulub impact structure, *Science Advances*, doi: 10.1126/sciadv.abe3647
- 2020 (9)**
051. CM Ostrander, **JD Owens**, SG Nielsen, TW Lyons, Y Shu, X Chen, EA Sperling, DT Johnston, SK Sahoo, and AD Anbar (2020) Thallium isotope ratios in shales from South China and northwestern Canada suggest widespread O<sub>2</sub> accumulation in marine bottom waters was an uncommon occurrence during the Ediacaran Period, *Chemical Geology*, doi: 10.1016/j.chemgeo.2020.119856
050. ML Abshire, **JD Owens**, J Cofrancesco, M Inthorn, and N Riedinger (2020) Geochemical Signatures for Redepositional Environments: The Namibia Continental Margin, *Marine Geology*, doi: 10.1016/j.margeo.2020.106316
049. RN Bryant, C Jones, MR Raven, **JD Owens**, and DA Fike (2020) Shifting modes of iron sulfidization at the onset of OAE-2 drive regional shifts in pyrite δ<sup>34</sup>S records, *Chemical Geology*, doi: 10.1016/j.chemgeo.2020.119808
048. F Wu, **JD Owens**, F Scholz, L Huang, S Li\*, N Riedinger, L Peterson, SG Nielsen (2020) Sedimentary vanadium isotope signatures in low oxygen marine conditions, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2020.06.013
047. CN Bowman, A Lindskog, NP Kozik, CG Richbourg, **JD Owens**, and SA Young, (2020) Integrated sedimentary, biotic, and paleoredox dynamics from multiple localities in southern Laurentia during the late Silurian (Ludfordian) extinction event, *Palaeogeography, Palaeoclimatology, Palaeoecology*, doi: 10.1016/j.palaeo.2020.109799
046. SA Young, E Benayoun, NP Kozik, O Hints, T Martma, ST Bergström, and **JD Owens** (2020) Marine redox variability from Baltica during extinction events in the latest Ordovician–early Silurian, *Palaeogeography, Palaeoclimatology, Palaeoecology*, doi: 10.1016/j.palaeo.2020.109792
045. GJ Gilleaudeau, SK Sahoo, CM Ostrander, **JD Owens**, SW Poulton, TW Lyons, and AD Anbar (2020) Molybdenum isotope and trace metal signals in an iron-rich Mesoproterozoic ocean: a snapshot from the Vindhyan Basin, India, *Precambrian Research*, doi: 10.1016/j.precamres.2020.105718
044. H Fan, SG Nielsen, **JD Owens**, M Auro, Y Shu, DS Hardisty, CN Bowman, SA Young, and H Wen (2020) Constraining oceanic oxygenation during the Shuram excursion in South China using thallium isotopes, *Geobiology*, doi: 10.1111/gbi.12379

043. MS Abadi, **JD Owens**, X Liu, TR Them II, X Cui, and GS Soreghan (2020) Atmospheric Dust Stimulated Marine Primary Productivity During Earth's Penultimate Icehouse, *Geology*, doi: 10.1130/G46977.1

**2019 (11)**

042. F Wu\*, **JD Owens**, L Tang, Y Dong, and F Huang (2019) Vanadium isotopic fractionation during the formation of marine ferromanganese crusts and nodules, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2019.09.007

041. CN Bowman, SA Young D Kaljo, ME Eriksson, TR Them II, O Hints, T Martma, and **JD Owens** (2019) Linking the progressive expansion of reducing conditions to a stepwise mass extinction event in the late Silurian oceans, *Geology*, doi: 10.1130/G46571.1

040. CM Ostrander, SK Sahoo, G Jiang, B Kendall, NJ Planavsky, TW Lyons, SG Nielsen, **JD Owens**, GW Gordon, SJ Romaniello, and AD Anbar (2019) Multiple negative molybdenum isotope excursions in the Doushantuo Formation (South China) fingerprint complex redox-related processes in the Ediacaran Nanhua Basin, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2019.07.016

039. SA Young, A Kleinberg, and **JD Owens** (2019) Geochemical evidence for expansion of marine euxinia during an early Silurian (Llandovery–Wenlock boundary) mass extinction, *Earth and Planetary Science Letters*, doi: 10.1016/j.epsl.2019.02.023

038. CM Ostrander, SG Nielsen, **JD Owens**, B Kendall, GW Gordon, SJ Romaniello, and AD Anbar (2019) Fully oxygenated water columns over continental shelves before the Great Oxidation Event, *Nature Geoscience*, doi: 10.1038/s41561-019-0309-7

037. MR Raven, DA Fike, AS Bradley, ML Gomes, **JD Owens**, and SA Webb (2019) Paired organic matter and pyrite  $\delta^{34}\text{S}$  profiles reveal mechanisms of carbon, sulfur, and iron cycle disruption during Ocean Anoxic Event 2, *Earth and Planetary Science Letters*, doi: 10.1016/j.epsl.2019.01.048

036. H Song, Y Du, TJ Algeo, J Tong, **JD Owens**, H Song, L Tian, H Qiu, Y Zhu, and TW Lyons (2019) Cooling-driven oceanic anoxia during the Smithian-Spathian transition (mid-Early Triassic), *Earth-Science Reviews*, doi: 10.1016/j.earscirev.2019.01.009

035. K Nguyen, GD Love, JA Zumberge, AE Kelly, **JD Owens**, MK Rohrssen, SM Bates, C Cai, and TW Lyons (2019) Absence of biomarker evidence for early eukaryotic life from the Mesoproterozoic Roper Group: Searching across a marine redox gradient in mid-Proterozoic habitability, *Geobiology*, doi: 10.1111/gbi.12329

034. TR Them II\*, CH Jagoe, AH Carothers, BC Gill, SE Grasby, DR Gröcke, R Yin, and **JD Owens** (2019) Terrestrial sources as the primary delivery mechanism of mercury to the oceans across the Toarcian Oceanic Anoxic Event (Early Jurassic), *Earth and Planetary Science Letters*, doi: 10.1016/j.epsl.2018.11.029

033. SG Nielsen, M Auro, K Righter, D Davis, J Prytulak, F Wu\*, and **JD Owens** (2019) Nucleosynthetic vanadium isotope heterogeneity of the early solar system recorded in chondritic meteorites, *Earth and Planetary Science Letters*, doi: 10.1016/j.epsl.2018.10.029

032. F Wu\*, **JD Owens**, T Huang, A Sarafian, KF Huang, I Sen, TJ Horner, J Blusztajn, P Morton, and SG Nielsen (2019) Vanadium Isotope Composition of Seawater, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2018.10.010

**2018 (7)**

031. **JD Owens**, CM Lowery, and TW Lyons (2018) Quantifying the missing sink for global organic carbon burial during a Cretaceous oceanic anoxic event, *Earth and Planetary Letters*, doi: 10.1016/j.epsl.2018.07.021

030. TR Them II\*, BC Gill, AH Caruthers, AM Gerhardt, DR Gröcke, SM Marroqín, TW Lyons, SG Nielsen, JP Trabucho Alexandre, and **JD Owens** (2018) Thallium isotopes reveal protracted anoxia during the Toarcian (Early Jurassic) associated with volcanism, carbon burial, and mass extinction, *Proceeding of the National Academy of Sciences*, doi: 10.1073/pnas.1803478115

029. CM Lowery, TJ Bralower, **JD Owens**, FJ Rodrigues-Tovar, H Jones, J Smit, MT Whalen, P Claeys, K Farley, SPS Gulick, JV Morgan, S Green, E Chenot, GL Christeson, CS Cockell, MJL Coolen, L Ferrière, C Gebhardt, K Goto, DA Kring, J Lofi, R Ocampo-Torres, L Perez-Cruz, AE Pickersgill, MH Poelchau, ASP Rae, C Rasmussen, M Rebolledo-Vieyra, U Riller, H Sato, SM Tikoo, N Tomioka, J Urrutia-Fucugauchi, J Vellekoop, A Wittmann, L Xiao, K E Yamaguchi, W Zylberman (2018) Rapid recovery of life at ground zero of the end-Cretaceous mass extinction, *Nature*, doi: 10.1038/s41586-018-0163-6
028. TT Isson, G Love, CL Dupont, CT Reinhard, AJ Zumberge, D Asael, B Gueguen, J McCrow, BC Gill, **JD Owens**, RH Rainbird, AD Rooney, MY Shao, EE Stueeken, KO Konhauser, S John, TW Lyons, and NJ Planavsky (2018) Tracking the Rise of Eukaryotes to Ecological Dominance with Zinc Isotopes, *Geobiology*, doi: 10.1111/gbi.12289
027. DS Hardisty, TW Lyons, N Riedinger, TT Isson, **JD Owens**, RC Aller, D Rye, NJ Planavsky, CT Reinhard, BC Gill, AL Masterson, D Asael, and DT Johnston (2018), An evaluation of sedimentary molybdenum and iron as proxies for pore fluid paleoredox conditions, *American Journal of Science*, doi: 10.2475/05.2018.04
026. R Raiswell, DS Hardisty, TW Lyons, DE Canfield, **JD Owens**, NJ Planavsky, SW Poulton, and CT Reinhard (2018) The Iron Paleoredox Proxies: A Guide to Proper Practice, Pitfalls, and Problems, *American Journal of Science*, doi: 10.2475/05.2018.03
025. DM Axelrad, RH Saff, VJM Salters, A Becker, C Jago, **JD Owens**, L Ringenberg, D Gbogbo, and O Fasakin (2018) Lead in Drinking Water in Tallahassee Florida's Schools – And a Call for Pediatricians to Support Actions to Reduce Children's Lead Exposure, *The Florida Pediatrician*, 37(1), 6–13
- 2017 (5)**
024. CM Ostrander\*, **JD Owens**, and SG Nielsen (2017) Constraining the rate of oceanic deoxygenation leading up to a Cretaceous Oceanic Anoxic Event (OAE-2: ~94 Ma), *Science Advances*, doi: 10.1126/sciadv.1701020
023. **JD Owens**, SG Nielsen, TJ Horner, CM Ostrander\*, and L Peterson (2017) Thallium-isotopic compositions of euxinic sediments as a proxy for global manganese-oxide burial, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2017.06.041
022. TR Them II\*, BC Gill, D Selby, DR Gröcke, R Friedman, and **JD Owens** (2017) Evidence for rapid weathering response to climatic warming during the Toarcian Oceanic Anoxic Event, *Nature Scientific Reports*, doi: 10.1038/s41598-017-05307-y
021. X Zhou, HC Jenkyns, W Lu, DS Hardisty, **JD Owens**, TW Lyons, and Z Lu (2017) Organically bound iodine as a bottom-water redox proxy: Preliminary validation and application, *Chemical Geology*, doi: 10.1016/j.chemgeo.2017.03.016
020. **JD Owens**, TW Lyons, DS Hardisty, CM Lowery, Z Lu, B Lee\*, and HC Jenkyns (2017) Patterns of local and global redox variability during the Cenomanian–Turonian Boundary Event (Oceanic Anoxic Event 2) recorded in carbonates and shales from central Italy, *Sedimentology*, doi: 10.1111/sed.12352
- 2016 (6)**
019. AJ Dickson, HC Jenkyns, D Porcelli, S van den Boorn, E Idiz, and **JD Owens** (2016) Corrigendum to "Basin-scale controls on the molybdenum-isotope composition of seawater during Oceanic Anoxic Event 2 (Late Cretaceous)", *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2016.06.025
018. **JD Owens**, CT Reinhard, M Rohressen, GL Love, and TW Lyons (2016) Empirical links between trace metal cycling and marine microbial ecology during a large perturbation to Earth's carbon cycle, *Earth and Planetary Science Letters*, doi: 10.1016/j.epsl.2016.05.046
017. X Wang, CT Reinhard, NJ Planavsky, **JD Owens**, TW Lyons, and TM Johnson (2016) Sedimentary chromium isotopic compositions across the Cretaceous OAE2 at Demerara Rise Site 1258, *Chemical Geology*, doi: 10.1016/j.chemgeo.2016.03.006

## JD Owens – CV

016. SG Nielsen, G Yogodzinski, J Prytulak, T Plank, SM Kay, RW Kay, J Blusztajn, **JD Owens**, M Auro, and T Kading (2016) Tracking along-arc sediment inputs to the Aleutian arc using thallium isotopes, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2016.03.010
015. SK Sahoo, NJ Planavsky, G Jiang, B Kendall, **JD Owens**, X Wang, X Shi, AD Anbar, and TW Lyons (2016) Oceanic oxygenation events in the anoxic Ediacaran ocean, *Geobiology*, doi: 10.1111/gbi.12182
014. SG Nielsen, **JD Owens**, and TJ Horner (2016) Analysis of high-precision vanadium isotope ratios by medium resolution MC-ICP-MS, *Journal of Analytical Atomic Spectrometry*, doi: 10.1039/C5JA00397K
- 2015 (3)**
013. S Sur, **JD Owens**, GS Soreghan, TW Lyons, R Raiswell, NG Heavens, and NW Mahowald (2015) Extreme eolian delivery of reactive iron to late Paleozoic icehouse seas, *Geology*, doi: 10.1130/G37226.1
012. MR Osburn, **JD Owens**, KD Bergmann, JP Grotzinger, and TW Lyons (2015) Dynamic changes in sulfate isotopes preceding the Ediacaran Shuram Excursion, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2015.07.039
011. X Zhou, HC Jenkyns, **JD Owens**, CK Junium, X Zhen, BB Sageman, DS Hardisty, TW Lyons, A Ridgwell, and Z Lu (2015) Upper ocean oxygenation dynamics from I/Ca ratios during the Cenomanian-Turonian OAE 2, *Paleoceanography*, doi: 10.1002/2014PA002741
- 2014 (1)**
010. LM Wehrmann, MJ Formolo, **JD Owens**, R Raiswell, TG Ferdelman, N Riedinger, and TW Lyons (2014) Iron speciation and cycling in glacially influenced high-latitude fjord sediments (West Spitsbergen, Svalbard) – Evidence for a benthic recycling-transport mechanism, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2014.06.007
- 2013 (2)**
009. **JD Owens**, BC Gill, HC Jenkyns, SM Bates, S Severnman, MMM Kuypers, RG Woodfine, and TW Lyons (2013) Sulfur isotopes track the global extent and dynamics of euxinia during Cretaceous Oceanic Anoxic Event 2, *Proceeding of the National Academy of Sciences*, doi: 10.1073/pnas.1305304110
008. RW Scott, MJ Formolo, N Rush, **JD Owens**, and F Oboh-Ikuenob (2013) Upper Albian OAE 1d Event in the Chihuahua Trough, New Mexico, U.S.A, *Cretaceous Research*, doi: 10.1016/j.cretres.2013.08.011
- 2012 (3)**
007. NJ Planavsky, A Bekker, A Hofmann, **JD Owens**, and TW Lyons (2012) Sulfur record of rising and falling marine oxygen and sulfate levels during the Lomagundi event, *Proceedings of the National Academy of Sciences*, doi: 10.1073/pnas.1120387109
006. **JD Owens**, TW Lyons, X Li, KG Macleod, G Gordon, MM Kuypers, AD Anbar, W Kuhnt, and S Severmann (2012) Iron isotope and trace metal records of iron cycling in the proto-North Atlantic during the Cenomanian-Turonian oceanic anoxic event (OAE-2), *Paleoceanography*, doi: 10.1029/2012pa002328
005. K Mitchell, PRD Mason, P Van Cappellen, TM Johnson, BC Gill, **JD Owens**, J Diaz, ED Ingall, G-J Reichart, and TW Lyons (2012) Selenium as paleo-oceanographic proxy: A first assessment, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2012.03.038
- 2011 (4)**
004. DL Boyer, **JD Owens**, TW Lyons, and ML Droser (2011) Joining forces: Combined biological and geochemical proxies reveal a complex but refined high-resolution palaeo-oxygen history in Devonian epeiric seas, *Palaeogeography, Palaeoclimatology, Palaeoecology*, doi: 10.1016/j.palaeo.2011.04.012
003. RP Brucker, J McManus, S Severmann, **JD Owens**, and TW Lyons (2011) Trace metal enrichments in Lake Tanganyika sediments: Controls on trace metal burial in lacustrine systems, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2010.09.041

## JD Owens – CV

002. R Raiswell, CT Reinhard, A Derkowski, **JD Owens**, SH Bottrell, AD Anbar, and TW Lyons (2011) Formation of syngenetic and early diagenetic iron minerals in the late Archean Mt. McRae Shale, Hamersley Basin, Australia: New insights on the patterns, controls and paleoenvironmental implications of authigenic mineral formation, *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2010.11.013
001. J Yao, J Li, **JD Owens**, and W Zhong (2011) Combining DNAzyme with single-walled carbon nanotubes for detection of Pb(ii) in water, *Analyst*, doi: 10.1039/C0AN00709A

### SUBMITTED

009. NM Ellis JW van Wijk, CM Lowery, **JD Owens**, and L Liu (submitted) Somali Basin stratigraphy constrains Afar mantle plume dynamic uplift, *Nature*
008. NP Kozik, SA Young, SM Newby, M Liu, D Chen, EU Hammarlund, DPG Bond, TR Them II, and **JD Owens** (submitted) Rapid marine oxygen variability as a driver of the Late Ordovician Mass Extinction, *AGU Advances*
007. F Wu, **JD Owens**, CR German, RA Mills, and SG Nielsen (submitted) Vanadium isotope fractionation during hydrothermal sedimentation: implications for the vanadium cycle in the oceans, *Geochimica et Cosmochimica Acta*
006. DD Gregory, L Kovarik, SD Taylor, DE Perea, **JD Owens**, N Atienza, and TW Lyons (in review) Nano-scale trace element zoning in pyrite framboids and implications for paleoproxy applications, *Geology*
005. X Chen\*, S Li, SM Newby, TW Lyons, F Wu, and **JD Owens** (in review) Black Sea iron and manganese shuttle has no effect on sedimentary thallium and vanadium isotope signature, *Geochimica et Cosmochimica Acta*
004. NP Kozik, BC Gill, **JD Owens**, and SA Young (in review) Sulfur isotopes and iodine records reveal a protracted cascade of reducing marine conditions associated with Late Ordovician climate change and mass extinctions, *AGU Advances*
003. GT Connock, **JD Owens**, and X Liu (in review) Biomarkers reveal the biotic induction of Oceanic Anoxic Event 2 and microbial response to marine deoxygenation, *Nature Ecology*
002. B Kenlee, **JD Owens**, R Raiswell, SW Poulton, S Severmann, PM Sadler, and TW Lyons (in review) Long-range transport of Saharan dust enhances oceanic iron bioavailability, *Geobiology*
001. LG Hancock, NJ Planavsky, SG Nielsen, **JD Owens**, RJ Behl, and TW Lyons (in review) A coupled molybdenum and thallium isotope assessment of regional and global paleoredox in the Monterey Formation: Implications for relative proxy fidelity, *Earth and Planetary Science Letters*

### IN PREP

008. MA Leroy, **JD Owens**, TR Them\*, SM Newby\*, and BC Gill (2018) Tracking marine deoxygenation during the Cambrian SPICE event using thallium isotopes,
007. SM Newby\*, S Li\*, S Severmann, J McManus, F Scholz, and **JD Owens** (in prep) Improvement of the thallium isotope redox proxy within suboxic to anoxic sediments, *Geochimica et Cosmochimica Acta*
006. S Li\*, O Friedrich, **JD Owens**, and F Wu (in prep) Reconciliation of the paleontological evidence and the geochemical proxies: Locally weak oxygenation in the bottom water during OAE2 as tracked by sedimentary V isotope composition, *Proceeding of the National Academy of Sciences*
005. X Chen\*, BJ Holdaway\*, B Kendall, AD Anbar, SG Nielsen, and JD Owens (in prep) Multiple transient episodes of mild oceanic oxygenation before the Great Oxidation Event, *Nature Geoscience*
004. C Cao, X-M Liu, **JD Owens**, and HC Jenkyns (in prep) Late Cretaceous cerium anomalies and globally distinctive redox responses before, during and after Oceanic Anoxic Event 2, *Paleoceanography and Paleoclimatology*

## JD Owens – CV

003. CT Reinhard, NJ Planavsky, F Ossa Ossa, **JD Owens**, Z Li, M Fakhraee, A Hofmann, SA Crowe, and TW Lyons (in prep) Burial of manganese oxides in marine sediments signals an early emergence of oxygenic photosynthesis, *Geobiology*
002. G Bonacina, A Sanfilippo, ME Previde, P Scotti, P Biaggi, A Piva, TW Lyons, C Diamond, C Hung, **JD Owens**, and SM Newby\* (in prep) Development of reducing conditions during the Cretaceous in the central Atlantic: Global and local implications, *Proceeding of the National Academy of Sciences*
001. TR Them II\*, **JD Owens**, AH Caruthers, and BC Gill (in prep) Massive marine trace metal drawdown during an Early Jurassic (Toarcian) oceanic anoxic event, *AGU Advances*

## CONFERENCE PRESENTATIONS (ANNUAL TOTAL)

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### 2021 (8)

155. L Tegler, T Horner, Y Wang, F Scholz, JD Owens, L Peterson, W Lu, and Sune Nielsen (2021) What controls the cadmium isotope composition of organic-rich sediments – Redox or Productivity?, *Ocean Sciences Meeting*
154. C Gfatter, and **JD Owens** (2021) Assessing trace metal incorporation using a flow through culturing system for benthic foraminifera, *Geological Society of America*
153. S Li, O Friedrich, **JD Owens**, and F Wu (2021) Reconciliation of the paleontological evidence and the geochemical proxies: The local weak oxygenation in the bottom water during OAE2 as tracked by sedimentary V isotope composition, *Geological Society of America*
152. S Marroquín, A Caruthers, M Aberhan, M Golding, D Gröcke, **JD Owens**, T Them II, J Trabucho-Alexandre, Y Veenma, and B Gill (2021) A long-term carbon isotope record across the Triassic-Jurassic transition from Alaska, *Geological Society of America*
151. CT Edwards, SA Young, N Kozik, C Bowman, **JD Owens**, (2021) Identifying the causes of early Paleozoic mass extinctions using new carbonate geochemical proxies: Local evidence of marine anoxia using I/Ca ratios, *Geological Society of America*
150. B Gill, M Aberhan, A Caruthers, M Golding, D Gröcke, S Marroquín, K McCabe, **JD Owens**, T Them II, J Trabucho-Alexandre, and Y Veenma (2021) The Grotto Creek succession: A unique record of Lat Triassic – Early Jurassic environmental and biologic change, *Geological Society of America*
149. J Van Wijk, N Ellis, L Liu, CM Lowery, and **JD Owens** (2021) Reconstructing paleo-dynamic topography of the ocean basins, *Geological Society of America*
148. MJ Bouwmeester, L Boschman, N Berends, **JD Owens**, BC Gill, and JP Trabucho Alexandre (2021) Cretaceous Black Shales in the Pacific: The Equatorial Position Hypothesis, *European Geophysical Union*

### 2020 (19)

147. GT Connock, **JD Owens**, and X Liu (2020) Molecular Fossils Reveal Processes Preceding, Initiating and Sustaining the Positive Carbon Isotope Excursion Used to Define Widespread Marine Deoxygenation in the mid-Cretaceous (OAE 2), *American Geophysical Union*
146. **JD Owens**, Chen X, and Wu F (2020) Reconstructing Redox Conditions Using a Multiproxy Metal Isotope Approach: A Case Study From The Neoproterozoic, *Geological Society of America*
145. **JD Owens**, Newby SM, Li S, Wu F, and Chen X (2020) Assessing Potential Diagenetic Signatures on Vanadium and Thallium Isotopes, *Geological Society of America*
144. GT Connock, **JD Owens**, and X Liu (2020) Biomarkers as a Tool to Constrain Ancient Biogeochemical Cycles, *Geological Society of America*
143. X Chen, S Li, SM Newby, TW Lyons, and **JD Owens** (2020) The Effects of Iron and Manganese Shuttles on Thallium and Vanadium Isotopes in Black Sea Sediments, *Goldschmidt*
142. **JD Owens**, X Chen, B Kendall, B Holdaway, S Newby, A Anbar, C Ostrander, and SG Nielsen (2020) Thallium Isotopes Track Episodic Manganese Oxide Burial Suggestion Marine Oxygenation during the Archean, *Goldschmidt*

## JD Owens – CV

141. B Gill and **JD Owens** (2020) Quantifying Organic Carbon Burial during the Toarcian Oceanic Anoxic Event, *Goldschmidt*
  140. B Conacina, E Previde Massara, P Scotti, P Viaggi, A Piva, C Diamond, S Newby, C Hung, A Sanflippo, TW Lyons, and **JD Owens** (2020) The Cretaceous Oceanic Anoxic Events: New Geochemical Data from the Central Atlantic Ocean, *Goldschmidt*
  139. Z Li, K Rybacki, **JD Owens**, N Planavsky, S Newby, F Ossa Ossa, A Hofmann, and C Reinhard (2020) Thallium Isotope Evidence for Cryptic Oxygenation on the Archean Earth, *Goldschmidt*
  138. M Vizcaíno, I Yurchenko, R Forkner, A Fildani, **JD Owens**, LE Duncan, and EA Sperling (2020) Meta-Analysis Identifies Global and Regional Change during Cretaceous Ocean Anoxic Event 2, *Goldschmidt*
  137. N Atienza, D Gregory, S Taylor, D Perea, **JD Owens**, and T Lyons (2020) Trace Element Mapping in Pyrite Framboids by Atom Probe Tomography, *Goldschmidt*
  136. C Reinhard, N Planavsky, F Ossa Ossa, **JD Owens**, A Hofmann, M Fakhraee, S Crowe, and T Lyons (2020) Tracking Oxygenic Photosynthesis on the Archean Earth, *Goldschmidt*
  135. MJ Bouweester, L Boschman, N Berends, **JD Owens**, BC Gill, and JPT Alexandre (2020) Cretaceous oceanic anoxia in the Pacific: Preservation of organic matter during equatorial crossings of seamounts, *International Association of Sedimentology*
  134. C Gfatter and **JD Owens** (2020) Experimental design to culture organisms for subsequent trace element analyses, *Southeast and Northeast Geological Society of America*
  133. JA Wadhams, SM Newby, TR Them II, and **JD Owens** (2020) Thallium isotopes track changing oceanic oxygen across the Paleocene-Eocene Thermal Maximum, *Southeast and Northeast Geological Society of America*
  132. SM Newby, S Li, A Karl, S Severmann, J McManus, F Scholz, and **JD Owens** (2020) A detailed investigation of thallium isotopes under low-oxygen open ocean conditions, *Southeast and Northeast Geological Society of America*
  131. DJ Govert, SA Young, D Kaljo, O Hints, T Martma, and **JD Owens** (2020) Investigating the role of marine redox conditions in an early Silurian mass extinction (Ireviken event): A deeper water perspective, *Southeast and Northeast Geological Society of America*
  130. NP Kozik, BC Gill, **JD Owens**, and SA Young (2020) Geochemical evidence for dynamic marine redox conditions throughout the Late Ordovician (Hirnantian) mass extinction, *Southeast and Northeast Geological Society of America*
  129. CM Ostrander, SG Nielsen, **JD Owens**, Y Shu, TW Lyons, G Jiang, DT Johnston, and AD Anbar (2020) Disparate thallium isotope trends in Ediacaran-aged shales from South China and Northwestern Canada, *Gordon Research Conference*
- 2019 (28)**
128. S Li, **JD Owens**, J Wadhams, S Newby, and S Severmann (2019) Sedimentary Vanadium Isotope Signatures from an Oxygen Transect across the California Mexico Margin, *American Geophysical Union*
  127. CM Ostrander, **JD Owens**, SG Nielsen, and AD Anbar (2019) Tracking the accumulation of O<sub>2</sub> in Archean oceans using thallium and molybdenum isotopes, *American Geophysical Union*
  126. M LeRoy, BC Gill, TR Them, and JD Owens (2019) Thallium Isotopic Evidence for Widespread Late Devonian Marine Anoxia, *American Geophysical Union*
  125. S Goderis, H Sato, L Ferrière, B Schmitz, D Burney, TJ Bralower, SJ de Graaff, T Déhais, NJ de Winter, M Elfman, J-G Feignon, SPS Gulick, A Ishikawa, P Kaskes, C Koeberl, P Kristiansson, CM Lowery, J Morgan, CR Neal, **JD Owens**, T Schulz, M Sinnesael, J Smit, J Vellekoop, MT Whalen, A Wittmann, F Vanhaecke, S Van Malderen, and P Claeys (2019) The Final Settling of Meteoritic Matter on the Peak-Ring of the Chicxulub Impact Structure at Site M0077A of IODP-ICDP Expedition 364, *Large Meteorite Impacts and Planetary Evolution VI*
  124. X Chen, F Wu, S Li, E Sperling, B Kendall, TW Dahl, and **JD Owens** (2019) Tracking subtle variations of Neoproterozoic oceanic oxygenation using vanadium isotopes: implications for early animals, *Geological Society of America*



123. BC Gill and **JD Owens** (2019) Quantifying organic carbon burial during the Toarcian oceanic anoxic event, *Geological Society of America*
122. CM Ostrander, SK Sahoo, G Jiang, B Kendall, NJ Planavsky, TW Lyons, SG Nielsen, **JD Owens**, GW Gordon, SJ Romaniello, and AD Anbar (2019) Multiple negative molybdenum isotope excursions in the Doushantuo formation (south china) fingerprint complex redox-related processes in the Ediacaran Nanhua basin, *Geological Society of America*
121. GJ Gilleaudeau, SK Sahoo, CM Ostrander, **JD Owens**, SW Poulton, TW Lyons, and AD Anbar (2019) Molybdenum isotope and trace metal signals in an iron-rich Mesoproterozoic ocean: a snapshot from the Vindhyan basin, India, *Geological Society of America*
120. JA Wadhams, **JD Owens**, SM Newby, and TR Them II (2019) Evidence for increased ocean oxygenation during the recovery of the Paleocene–Eocene Thermal Maximum, *Geological Society of America*
119. CN Bowman, A Likdskog, NP Kozik, **JD Owens**, and SA Young (2019) A basinal expression of the late Silurian (Ludfordian) extinction event: integrated sedimentary, biotic, and paleoredox dynamics in a carbonate platform from southern Laurentia, *Geological Society of America*
118. NP Kozik, SA Young, P Ahlberg, and **JD Owens** (2019) Investigating redox dynamics across the Cambrian-Ordovician boundary: a deep-water perspective from Baltica, *Geological Society of America*
117. MS Abadi, **JD Owens**, X Liu, TR Them II, X Cui, and GS Soreghan (2019) Late Paleozoic iron fertilization from dust enhanced shallow marine primary productivity, *Geological Society of America*
116. SM Newby, **JD Owens**, and TJ Algeo (2019) Brief oxygenation event during extensive anoxia across the Permian-Triassic transition as revealed by thallium isotopes, *Geological Society of America*
115. BK Lee, **JD Owens**, S Severmann, R Raiswell, PM Sadler, and TW Lyons (2019) Bioavailable Fe Supply by Aeolian Dust to the North Atlantic, *Goldschmidt*
114. DD Gregory, DE Perea, SD Taylor, L Kovarik, **JD Owens**, and TW Lyons (2019) The formation of pyrite framboids: a view from TEM and APT, *Goldschmidt*
113. M Paez-Reyes, **JD Owens**, H Carvajal, T Gaona, I Lerma, A Brandon, S Sahoo, and P Copelandard (2019) Why was there no mass extinction during the Cenomanian-Turonian Oceanic Anoxic Event 2?, *Goldschmidt*
112. C Cao, X-M Liu, **JD Owens**, and DJ Thomas (2019) Globally distinctive redox responses to Oceanic Anoxic Event 2, *Goldschmidt*
111. ST Rader, RM Gaschnig, **JD Owens**, and GE Bebout (2019) Thallium variations during high-pressure metamorphism, *Goldschmidt*
110. M Abshire, N Riedinger, J Cofrancesco, and **JD Owens** (2019) Depositional control on sedimentary trace metal accumulations, *Goldschmidt*
109. B Kendall, X Lu, AI Sheen, S Yang, TW Dahl, **JD Owens**, and CT Reinhard (2019) Towards an Integrated Multi-Proxy Approach to Constrain Proterozoic Global Ocean Redox Conditions Using Redox-Sensitive Trace Metal Enrichments and Isotope Compositions, *GAC-MAC*
108. CM Ostrander, SG Nielsen, **JD Owens**, B Kendall, GW Gordon, SJ Romaniello, and AD Anbar (2019) Fully oxygenated water columns over continental shelves before the Great Oxidation Event, *AbSciCon*
107. **JD Owens**, and BC Gill (2019) Comparing and quantifying the known organic carbon burial with mapped estimates for global burial within 2 OAEs, *Hydrocarbons in space and Time (Invited)*
106. S Li, **JD Owens**, and F Wu (2019) A first assessment of the paleoredox utility of vanadium isotopes using black shales from an ocean anoxic event, *Southeast Geological Society of America*
105. A Lindskog, SA Young, NP Kozik, and **JD Owens** (2019) Trans-Atlantic redox records through a mid-Silurian extinction event, *Southeast Geological Society of America*
104. JA Wadhams, **JD Owens**, and TR Them II (2019) Tracking the initial onset of deoxygenation across the Paleocene-Eocene thermal maximum, *Southeast Geological Society of America*

103. E Benayoun, SA Young, O Hints, T Martma, and **JD Owens** (2019) Paleoredox changes associated with early Silurian extinction events: New geochemical evidence from Baltoscandia, *Southeast Geological Society of America*
102. CN Bowman, SA Young NP Kozik, and **JD Owens** (2019) Geochemical evidence of redox changes associated with the late Silurian LAU/Kozlowskii extinction from carbonate facies of Laurentia and Baltica, *Southeast Geological Society of America*
101. SN Newby, **JD Owens**, and TJ Algeo (2019) Brief oxygenation event during extensive anoxia across the Permian-Triassic transition as revealed by thallium isotopes, *Southeast Geological Society of America*
- 2018 (26)**
100. N Riedinger, WP Gilhooly III, and **JD Owens** (2018) Trace metal and iron cycling in deep-subsurface, coal bed-containing sediments off Shimokita (Japan), *American Geophysical Union*
099. TR Them, BC Gill, AH Carothers, DR Gröcke, SM Marroquín, JP Trabuco Alexandre, and **JD Owens** (2018) Are OAEs actually CBEs? Evidence of marine anoxia through the eyes of a novel metal isotope, *Geological Society of America*
098. MS Abadi, GS Soreghan, **JD Owens**, TR Them, and X Liu (2018) Atmospheric Dust Stimulated Marine Primary Productivity During Earth's Penultimate Icehouse, *Geological Society of America*
097. CN Bowman, SA Young, C Richbourg, NP Kozik, and **JD Owens** (2018) Evidence of oceanic euxinia associated with the late Silurian Lau/Kozlowskii extinction from Laurentian carbonates of Tennessee and Nevada, *Geological Society of America*
096. NP Kozik, SA Young, BC Gill, and **JD Owens** (2018) Investigating Redox Conditions and Mechanisms for the End Ordovician (Hirnantian) Mass Extinction: A western Laurentia Perspective, *Geological Society of America*
095. TL Bandy, **JD Owens**, TR Them, SA Young, and GS Soreghan (2018) Environmental controls on organic carbon productivity in the Midland Basin, *Geological Society of America*
094. SN Newby, **JD Owens**, TJ Algeo (2018) Protracted anoxia during the Permian-Triassic transition as revealed by thallium isotopes, *Geological Society of America*
093. SA Young, A Kleinberg, and **JD Owens** (2018) Dynamic local and global marine redox conditions during an early Silurian extinction (Ireviken event): geochemical evidence from Laurentia, *Geological Society of America*
092. **JD Owens** (2018) Constraining global (de)oxygenation during Phanerozoic climate events, *Ocean Deoxygenation Conference*
091. **JD Owens**, TR Them II, F Wu, and SG Nielsen (2018) Novel isotope systems to better constrain local to global reduced bottom water oxygen contents, *Goldschmidt Conference*
090. TR Them II, CH Jagoe, BC Gill, AH Caruthers, SE Grasy, DR Gröcke, R Yin, and **JD Owens** (2018) Toarcian mercury anomalies record terrestrial disturbance rather than volcanic activity, *Goldschmidt Conference*
089. CN Bowman, SA Young, D Kaljo, ME Eriksson, TR Them II, T Martma, O Hints, and **JD Owens** (2018) Thallium isotopic evidence for widespread ocean anoxia associated with the late Silurian Lau extinction event, *Goldschmidt Conference*
088. F Wu, **JD Owens**, and SG Nielsen (2018) Vanadium isotope a new tool for tracking low oxygen conditions, *Goldschmidt Conference*
087. SM Marroquín, BC Gill, TR Them II, **JD Owens**, DR Gröcke, and AH Caruthers (2018) Investigating the sulphur cycle during the end-Triassic mass extinction from Panthalassa, *Goldschmidt Conference*
086. Z Li, **JD Owens**, NJ Planavsky, K Ozaki, and CT Reinhard (2018) A thallium isotope record of ocean oxygenation during the Lomagundi Event, *Goldschmidt Conference*
085. R Gaschnig, **JD Owens**, SN Newby, CT Reinhard, X Wang, D Asael, NJ Planavsky and R Rudnick (2018) The Tl and Cr isotope composition of the upper continental crust from the Archean to present, *Goldschmidt Conference*

## JD Owens – CV

084. CM Ostrander, SG Nielsen, **JD Owens**, BK Kendall, GW Gordon, SJ Romaniello, and AD Anbar (2018) Oxygen oases were persistent and widespread before the GOE, *Goldschmidt Conference*
083. MA Leroy, **JD Owens**, TR Them, and BC Gill (2018) Tracking marine deoxygenation during the Cambrian SPICE event using thallium isotopes, *Goldschmidt Conference*
082. S Marroquín, BC Gill, TR Them II, J Trabucho-Alexandre, M Aberhan, **JD Owens**, D Gröcke, and A Caruthers (2018) Investigating a unique open ocean geochemical record of the end Triassic mass extinction from Panthalassa, *Southeastern Biogeochemistry Symposium*
081. E Benyoun, **JD Owens**, O Hints, T Martma, and SA Young (2018) Expansion of anoxia/euxinia as driver for early Silurian extinction events: New geochemical proxy data from Sweden, *Southeastern Biogeochemistry Symposium*
080. Z Li, CT Reinhard, NJ Planavsky, and **JD Owens** (2018) A thallium isotope record of ocean oxygenation during the Lomagundi Event, *Southeastern Biogeochemistry Symposium*
079. CN Bowman, C Richbourg, **JD Owens**, and SA Young (2018) Geochemical evidence for widespread anoxia-euxinia during the Late Silurian Lau Extinction Event, *Southeastern Biogeochemistry Symposium*
078. TR Them II, AH Caruthers, BC Gill, DR Gröcke, SM Marroquín, and **JD Owens** (2018) Tracking Early Jurassic marine (de)oxygenation, *Southeastern Biogeochemistry Symposium*
077. KM Turner, and **JD Owens** (2018) A Geochemical Analysis of Rare Earth Elements Associated with Significant Phosphate Deposits of West-Central Florida, *Southeastern Biogeochemistry Symposium*
076. F Wu, **JD Owens**, SG Nielsen, CR German, and R Mills (2018) V isotope composition in modern marine hydrothermal sediments, *Southeastern Biogeochemistry Symposium*
075. BJ Holdaway, **JD Owens**, SG Nielsen, CM Ostrander, and AD Anbar (2018) Using thallium isotopes in the ~2.63 Ga Jeerinah Formation from Hamersley Basin, Western Australia, to constrain ancient seafloor oxygenation, *Southeastern Biogeochemistry Symposium*
074. SG Nielsen, K Righter, F Wu, **JD Owens**, J Prytulak, K Burton, and K Davis (2018) Nucleosynthetic Heterogeneity Control Vanadium Isotope Variations in Bulk Chondrites, *Lunar and Planetary Science Conference*
- 2017 (22)**
073. **JD Owens**, TW Lyons, and CM Lowery (2017) Assessing global carbon burial during Oceanic Anoxic Event 2, Cenomanian-Turonian boundary event, *American Geophysical Union*
072. TR Them II, AH Caruthers, BC Gill, DR Gröcke, SM Marroquín, and **JD Owens** (2017) Tracking Early Jurassic marine (de)oxygenation, *American Geophysical Union*
071. BJ Holdaway, **JD Owens**, SG Nielsen, CM Ostrander, and AD Anbar (2017) Using thallium isotopes in the ~2.63 Ga Jeerinah Formation from Hamersley Basin, Western Australia, to constrain ancient seafloor oxygenation, *American Geophysical Union*
070. KM Turner, and **JD Owens** (2017) A Geochemical Analysis of Rare Earth Elements Associated with Significant Phosphate Deposits of West-Central Florida, *American Geophysical Union*
069. F Wu, **JD Owens**, SG Nielsen, CR German, and R Mills (2017) V isotope composition in modern marine hydrothermal sediments, *American Geophysical Union*
068. CM Ostrander, SG Nielsen, **JD Owens**, G Jiang, R Zhang, NJ Planavsky, SK Sahoo, TW Lyons, and AD Anbar (2017) Thallium isotopes track fluctuations in global manganese oxide burial during the Ediacaran Period, *American Geophysical Union*
067. S Marroquín, BC Gill, TR Them II, J Trabucho-Alexandre, M Aberhan, **JD Owens**, D Gröcke, and A Caruthers (2017) Investigating a unique open ocean geochemical record of the end Triassic mass extinction from Panthalassa, *American Geophysical Union*
066. MA Leroy, BC Gill, TR Them II, and **JD Owens** (2017) A thallium isotopic record of the Cambrian SPICE event from the Alum Shale, Andrarum Sweden, *Geological Society of America*
065. BC Gill, MA Leroy, A Gerhardt, TR Them II, and **JD Owens** (2017) Deciphering the record of biologic and environmental change during the later Cambrian Steptoean positive carbon isotope excursion, *Geological Society of America*

## JD Owens – CV

064. S Marroquín, BC Gill, TR Them II, J Trabucho-Alexandre, M Aberhan, **JD Owens**, D Gröcke, and A Caruthers (2017) Investigating a unique open ocean geochemical record of the end Triassic mass extinction from Panthalassa, *Geological Society of America*
063. C Lowery, HL Jones, TJ Bralower, J Smit, FJ Rodrigues-Tovar, MT Whalen, **JD Owens**, and Expedition 364 Scientists IODP-ICDP (2017) The recovery of life at ground zero, *Geological Society of America*
062. E Benayoun, SA Young, **JD Owens**, ME Eriksson, O Hints, and T Martma (2017) Expansion of anoxia/euxinia as a driver for early Silurian extinction events: new sedimentary and geochemical proxy data from Baltica, *Geological Society of America*
061. CN Bowman, SA Young, **JD Owens**, D Kaljo, O Hints, and T Martma (2017) Oceanographic redox changes associated with the late Silurian LAU extinction event: new geochemical evidence from the priekule-20 drill core, Latvia, *Geological Society of America*
060. F Wu, **JD Owens**, SG Nielsen, F Scholz, N Riedinger, L Peterson, and TW Lyons (2017) The vanadium isotope composition of marine sediments, *Goldschmidt Conference*
059. KS Rybacki, **JD Owens**, NJ Planavsky, and CT Reinhard (2017) Tracing the local accumulation of free oxygen within an Archean marine system using a coupled Fe-Mo-Tl stable isotope approach, *Goldschmidt Conference*
058. R Gaschnig, CT Reinhard, **JD Owens**, NJ Planavsky, X Wang, D Asael, A Graney, R Rudnick, and R Helz (2017) Behavior of Mo, U, and Tl isotopes during differentiation in the Kilauea Iki system, *Goldschmidt Conference*
057. SK Sahoo, GJ Gilleadeau, **JD Owens**, SW Poulton, and TW Lyons (2017) Iron-rich conditions and molybdenum enrichment in a Mesoproterozoic shelf setting: A snapshot from the Vindhyan Basin, India, *Goldschmidt Conference*
056. KS Rybacki, **JD Owens**, NJ Planavsky, and CT Reinhard (2017) Tracing the local accumulation of free oxygen within an Archean marine system using a coupled Fe-Mo-Tl stable isotope approach, *Geobiology Society Conference*
055. E Benayoun, SA Young, and **JD Owens** (2017) Expansion of Anoxia/Euxinia as Driver for Early Silurian Extinction Events: New Geochemical Proxy Data from Sweden, *Southeastern Biogeochemistry Symposium*
054. CN Bowman, SA Young, and **JD Owens** (2017) Oceanographic Redox Changes Associated with the Late Silurian Lau Extinction Event: New Geochemical Evidence from Central Tennessee and Latvia, *Southeastern Biogeochemistry Symposium*
053. N Kozik, SA Young, and **JD Owens** (2017) Investigating the Linkage of Increasing Oxygen to the Great Ordovician Biodiversification Event Using Geochemical Fingerprints in the Appalachian Basin, *Southeastern Biogeochemistry Symposium*
052. CM Lowery, H Jones, J Smit, TJ Bralower, and **JD Owens** (2017) The Recovery of Life in the Chicxulub Crater Following the End Cretaceous Mass Extinction, *Lunar and Planetary Science Conference*
- 2016 (10)**
051. J Cofrancesco, N Riedinger, and **JD Owens** (2016) Constraining trace metal paleo-proxies for black shale deposition in upwelling systems: the Benguela upwelling system offshore Namibia, *American Geophysical Union*
050. **JD Owens**, and TW Lyons (2016) Comparing the observed global organic carbon burial versus carbon-isotope-based model estimates during OAE 2: Quantifying the missing sink, *SEPM Research Conference on OAEs*
049. **JD Owens**, CM Ostrander, SG Nielsen, CT Reinhard, BC Gill, CM Lowery, GD Love, M Rohrseen, DS Hardisty, Z Lu, HC Jenkyns, and TW Lyons (2016) The stepwise evolution of marine de-oxygenation during the Cretaceous OAE2, *Geological Society of America*
048. SA Young, **JD Owens**, ME Eriksson, and SM Bergström (2016) Early Silurian (Llandovery) biotic and oceanographic events: insights from new stable isotope geochemistry within the Baltic Basin, *Geological Society of America*

## JD Owens – CV

- 047. TR Them II, BC Gill, HL Grove, D Selby, DR Gröcke, and **JD Owens** (2016) Geochemical evidence for persistent anoxia in eastern Panthalassa during the early Jurassic, *Geological Society of America*
- 046. CN Bowman, SA Young, and **JD Owens** (2016) Oceanographic redox changes associated with the late Silurian Lau event as evidence from the Brownsport Formation, Tennessee, *Geological Society of America*
- 045. A Kleinberg, SA Young, and **JD Owens** (2016) Geochemical investigation of environmental changes associated with the early Silurian Ireviken extinction event, *Geological Society of America*
- 044. NP Kozik, SA Young, and **JD Owens** (2016) Investigating the linkage of increasing oxygen to the Great Ordovician Biodiversification Event using geochemical fingerprints in the Appalachian Basin, *Geological Society of America*
- 043. SG Nielsen, CM Ostrander, and **JD Owens** (2016) Ocean oxygenation across global climate perturbations recorded by thallium isotopes, *Goldschmidt Conference*
- 042. F Zhang, C Li, VA Meleshik, BG Pokrovsky, W Shi, M Cheng, B Kendall, SJ Romaniello, **JD Owens**, and AD Anbar (2016) Uranium Isotope Variation Across the Ediacaran Shuram Excursion, *Goldschmidt Conference*

### 2015 (6)

- 041. **JD Owens**, SG Nielsen, CM Ostrander, L Peterson, and AD Anbar (2015) Development and Applications of Thallium isotopes: a new proxy tracking the extent of manganese oxide burial, *American Geophysical Union (Invited)*
- 040. CM Ostrander, **JD Owens**, and SG Nielsen (2015) Thallium isotopes tracking Mn-oxide burial – a proxy for deoxygenation during Oceanic Anoxic Event 2, *American Geophysical Union*
- 039. T Huang, **JD Owens**, A Sarafian, I Sen, DF Huang, J Blusztajn, and SG Nielsen (2015) Development of analytical techniques of vanadium isotope in seawater, *American Geophysical Union*
- 038. TYS Tang, NJ Planavsky, **JD Owens**, G Love, TW Lyons, and LC Peterson (2015) Tracking Eukaryotic Production and Burial Through Time with Zinc Isotopes, *American Geophysical Union*
- 037. SA Young, ME Eriksson, and **JD Owens** (2015) Paired sulfur and carbon isotope stratigraphy for the Late Ludfordian (Silurian) of Gotland, Sweden: Implications for environmental, oceanographic, and biotic change, *Geological Society of America*
- 036. B Lee, **JD Owens**, and TW Lyons (2015) Distribution of Bioavailable Iron in the Pacific Ocean and Relationships to Dust Delivery and Potential Continental Sources, *Goldschmidt Conference*

### 2014 (6)

- 035. **JD Owens**, and SG Nielsen (2014) Thallium isotope a new tool for tracking the global marine ferromanganese burial, *American Geophysical Union*
- 034. B Lee, **JD Owens**, and TW Lyons (2014) Implication of eolian delivery and accumulation of highly reactive iron to the Atlantic Ocean, *American Geophysical Union*
- 033. GS Soreghan, S Sur, **JD Owens**, R Raiswell, NG Heavens, NM Mahowald, and TW Lyons (2014) The biological impact of eolian delivery of reactive iron to late Palaeozoic icehouse seas, *Geological Society of America*
- 032. A Chappaz, **JD Owens**, and TW Lyons (2014) Molybdenum Speciation in Modern and Ancient Euxinic Settings, *Goldschmidt Conference*
- 031. B Lee, **JD Owens**, and TW Lyons (2014) Delivery and Accumulation of Highly Reactive Iron to the Open Ocean and Its Implications, *Goldschmidt Conference*
- 030. **JD Owens**, CT Reinhard, M Rohrsen, GD Love, and TW Lyons (2014) Marine trace-metal drawdown during the Cenomanian-Turonian Oceanic Anoxic Event and implications for global redox and biological perturbation, *Northeast Geobiology Symposium*

### 2013 (5)

## JD Owens – CV

029. BC Gill, **JD Owens**, TR Them II, HC Jenkyns, and TW Lyons (2013) A refined investigation into the sulfur and iron cycles during the Toarcian OAE, *American Geophysical Union*
028. CT Reinhard, NJ Planavsky, X Wang, **JD Owens**, TM Johnson, WW Fischer, and TW Lyons (2013) Chromium isotopes in siliciclastic sediments and sedimentary rocks as a developing proxy for Earth surface change, *American Geophysical Union*
027. SK Sahoo, J Ganqing, NJ Planavsky, B Kendall, **JD Owens**, AD Anbar, and TW Lyons (2013) Turbulent times for early animals?, *Geological Society of America*
026. **JD Owens**, CT Reinhard, and TW Lyons (2013) Trace metal drawdown during a Cretaceous oceanic anoxic event: implications for global redox conditions, *Goldschmidt Conference*
025. LM Wehrmann, MJ Formolo, **JD Owens**, TG Ferdelman, R Raiswell, and TW Lyons (2013) The cycling and transport of glacially derived iron in Arctic fjord sediments, *Goldschmidt Conference 2012 (7)*
024. RW Scott, NK Rush, MJ Formolo, FE Obohikuenobe, and **JD Owens** (2012) Late Albian Oceanic anoxia in the Chihuahua trough, South-Central New Mexico, *Geological Society of America*
023. **JD Owens**, LM Wehrmann R Raiswell, and TW Lyons (2012) Enhanced delivery of bioavailable Fe through glacial processes in Kongsfjorden, Svalbard, *Goldschmidt Conference*
022. BC Gill, TW Lyons, **JD Owens**, S Bates, HJ Brumsack, and H Jenkyns (2012) Interpreting the trace metal records of ancient epeiric seaways: Lessons from the Toarcian (Jurassic) black shales of Europe, *Goldschmidt Conference*
021. LM Wehrmann, **JD Owens**, MJ Formolo, TG Ferdelman, and TW Lyons (2012) Glacially derived iron as the key driver for biogeochemical processes in Arctic fjord sediments (West Svalbard), *Goldschmidt Conference*
020. **JD Owens**, BC Gill, H Jenkyns, MMM Kuypers, S Severmann, S Bates, and TW Lyons (2012) Perturbations to the Global Sulfur Cycle during a mid-Cretaceous Oceanic Anoxic Event (OAE 2: Cenomanian/Turonian), *Urbino Summer School of Paleoclimatology (USSP)*
019. **JD Owens**, BC Gill, H Jenkyns, MMM Kuypers, S Severmann, S Bates, and TW Lyons (2012) Perturbations to the Global Sulfur Cycle during a mid-Cretaceous Oceanic Anoxic Event (OAE 2: Cenomanian/Turonian), *European Geophysical Union*
018. **JD Owens**, DL Boyer, ML Droser, and TW Lyons (2012) Low oxygen bottom waters in the Devonian ocean through a combined biological and geochemical approach, *European Geophysical Union*
- 2011 (2)**
017. **JD Owens**, TW Lyons, GS Soreghan, M Soreghan, A Chappaz, and R Raiswell (2011) Quantifying bioavailable iron delivery by dust during the icehouse of the late Paleozoic, *American Geophysical Union*
016. **JD Owens**, TW Lyons, S Severmann, B Gill, H Jenkyns, MMM Kuypers, G Gordon, A Anbar, and W Kuhnt (2011) Global Perturbation of the Marine Iron Cycle During OAE-2, *Cretaceous Symposium*
- 2010 (6)**
015. S Sur, GS Soreghan, **JD Owens**, TW Lyons, and MJ Soreghan (2010) Eolian delivery of highly reactive iron to the glacial ocean of the late Paleozoic, *American Geophysical Union*
014. **JD Owens**, B Gill, H Jenkyns, and TW Lyons (2010) Perturbations to the Global Sulfur Cycle during Ocean Anoxic Events, *Geological Society of America*
013. R Raiswell, C Reinhard, A Derkowski, **JD Owens**, S Bottrell, A Anbar, and TW Lyons (2010) Formation of syngenetic and early diagenetic iron minerals in the late Archean Mt. McRae Shales: paleoceanographic implications, *Geological Society of America*
012. S Severmann, J McManus, R Poulson-Brucker, **JD Owens**, TW Lyons, A Anbar, and G Gordon (2010) Modern lakes and ancient oceans: trace metals and their isotopes in an anoxic African rift lake, *Goldschmidt*
011. X Li, S Severmann, **JD Owens**, and B Sageman (2010) Hydrothermal contributions to oceanic anoxic event 2? Evidence from trace metals, *Goldschmidt*

## JD Owens – CV

010. **JD Owens**, S Severmann, TW Lyons, MMM Kuypers, W Kuhnt, G Gordon, and A Anbar (2010) A  $\delta^{56}\text{Fe}$  record of ocean-scale iron shuttling during OAE 2, *Southern California Geobiology Symposium*  
**2006-2009 (9)**
009. B Gill, TW Lyons, **JD Owens**, H Brumsack, and H Jenkyns (2009) A multi geochemical proxy approach to deciphering the Toarcian OAE, *American Geophysical Union*
008. **JD Owens**, GS Soreghan, A Gearhardt, S Sur, and TW Lyons (2009) Iron cycling in a late Paleozoic dust bowl, *American Geophysical Union*
007. DL Boyer, ML Droser, and **JD Owens** (2009) High Resolution Biotic and Geochemical Data from Devonian Dysaerobic Shales of New York State, *NAPC*
006. GS Soreghan, S Sur, TW Lyons, MJ Soreghan, and **JD Owens** (2009) Production and weathering of loess in the late Paleozoic tropical Pangaea and implications for iron delivery to the glacial ocean, *Goldschmidt*
005. **JD Owens**, S Severmann, TW Lyons, MMM Kuypers, W Kuhnt, G Gordon, and A Anbar (2008) Perturbations of the Global Fe Cycle during OAE II, *American Geophysical Union*
004. **JD Owens**, S Severmann, J McManus, TW Lyons, and B Gill (2008) Sulfur Isotopes in Lake Tanganyika, *Southern California Geobiology Symposium*
003. R Poulson Brucker, J McManus, S Severmann, **JD Owens**, and TW Lyons (2008) Trace Metal Associations in an Anoxic Lake: the relative Roles of Organic Carbon and Reduced Sulfur, *American Geophysical Union*
002. S Severmann, J McManus, WM Berelson, T Riedel, and **JD Owens** (2008) The benthic flux of iron from river-dominated continental shelves of the North Pacific, *Ocean Sciences Meeting*
001. S Severmann, J McManus, **JD Owens**, TW Lyons, G Gordon, and A Anbar (2006) Combined Fe-S stable isotopes in modern anoxic environments and the effects of Fe versus S limitation, *American Geophysical Union*

## GRANTS AWARDED

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### *Federal Grants*

- 2020 NSF Sedimentary Geology and Paleobiology: *Collaborative research: Multi-disciplinary investigation of the links between volcanism, marine redox, and mass extinction during the Late Triassic and Early Jurassic*, Co-I: JD Owens
- 2018 NASA Exobiology: *Using vanadium isotopes to investigate small fluctuations in early oceanic oxygenation: implications for the emergence and evolution of early animals*, PI: JD Owens
- 2018 NSF Sedimentary Geology and Paleobiology: *Discerning Mechanisms of Environmental and Oceanographic Change Associated with the Late Silurian (Ludfordian) Extinction Event*, Co-I: JD Owens
- 2016 NASA Exobiology: *Tracking the Initiation of Marine Ocean Oxygenation Through Manganese-Oxide Burial Using Thallium Isotopes*, PI: JD Owens
- 2016 NSF EAR IF: *Acquisition Of A Gas Source Stable Isotope Ratio Mass Spectrometer (IRMS) For Earth And Ocean Sciences Research At Florida State University*, Co-I: JD Owens
- 2014 NSF OCE: *Chemical Oceanography: Fingerprinting and Calibrating Low Oxygen Conditions Using Vanadium Isotopes*, PI: JD Owens

### *Contracts, Private Foundations, and Internal grants*

- 2020 SLOAN Research Foundation Fellowship: *Constraining ancient ocean deoxygenation – implications for marine extinctions and future climate scenarios*, PI: JD Owens
- 2018 FSU PG: *Constraining the Environmental Mechanisms of two mass extinctions during the end the end-Triassic and early Jurassic*, PI: JD Owens
- 2016 University of Tulsa: *Organic rich shales to discern the global redox conditions*, PI: JD Owens

## JD Owens – CV

- 2016 Exxon: *Collaborative research: Analysis, Evaluation and Measurement of Vanadium Isotope ( $\delta^{51}\text{V}$ ) Measurements in Hydrocarbon Systems*, PI: JD Owens
- 2016 FSU FYAP: *Constraining oxygen variability across glacial-interglacial cycles*, PI: JD Owens

### *As a Graduate Student*

- 2012 Society for Sedimentary Geology (SEPM): *Assessing Dust Delivery of Bioavailable Iron to the Ocean as a Driver and Consequence of Cenozoic Climate Change*
- 2012 Geological Society of America (GSA): *Assessing Loess Deposits as an archive for Bioavailable Iron Delivery to the Oceans*

## TEACHING ACTIVITIES

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### *FSU COURSES TAUGHT (NUMBER OF STUDENTS)*

- History of Earth Systems (50, 15, 69 52), F 2018–2021 – lower-division earth science course focusing the co-evolution of environment, climate and biological evolution throughout Earth’s history
- Environmental Capstone (88 – co-taught, 33, 34), S 2017–2020 – upper-division field course for Environmental Science majors
- Surficial Biogeochemical cycles (15, 6), F 2017, 2020 – graduate-level class exploring biogeochemical cycles related to climate perturbations including mass balance modeling
- Global climate through time (8), F 2016 – upper-division earth science course focusing on climate and biological interactions throughout Earth’s history
- Graduate Seminar (12), S 2016
- Marine Geology (20, 9), S 2016, S 2021 – graduate-level class exploring early marine geology with a focus on diagenesis in siliclastic sediments

### *GUEST LECTURE*

- Environmental Capstone, 2017–20121
- Marine Geoscience Leadership Panel on Time Management, 2017
- Agouron Geobiology Course, 2015

### *FSU POSTDOC ADVISEES*

- Xinming Chen, 2019-present
- Fei Wu, 2016-2018, now a Chinese Academy of Geosciences, Wuhan
- Theodore Them (FSU Arts and Science Fellow), 2016-2018, now an Assistant Professor at College of Charleston

### *FSU GRADUATE STUDENT PRIMARY ADVISEES*

#### *PHD*

- John Goodin, Started F 2021
- Christian Gfatter, Candidate S 2021
- Siqi Li, Candidate F 2018
- Sean Newby, Candidate S 2018

#### *MASTERS*

- Jane Wadhams, Started F 2021
- Adam Karl, Graduated S 2021
- Terryl Bandy, Graduated S 2019
- Brett Holdaway, Graduated F 2018
- Kyle Turner, Graduated S 2018

### *FSU GRADUATE STUDENT COMMITTEE*



## **JD Owens – CV**

### *PHD*

- Zhou Liang, Started F 2021
- Steffanie Sillitoe-Kukas, Started S 2020
- Chance Hannold, Started S 2020
- Aaron Ashley, Started F 2019
- Srishti Sharma, Candidate F 2017
- Nevin Kozik, Candidate F 2019
- Fajun Sun, Graduated S 2021
- Chelsie Bowman, Graduated F 2020

### *MASTERS*

- Stephen Clapp, Graduated S 2020
- Lindsy Alman, Fall F 2019
- Zhou Liang, Graduated S 2021
- Jennifer Fought, Graduated S 2021
- Daniel Govert, Graduate F 2020
- Matthew Schreck, Graduate S 2020
- Chance Hannold, Graduated F 2019
- Emily Benayoun, Graduated S 2019
- Randall Funderburk, Graduated F 2019
- Brandon Fish, Graduated S 2018
- Nevin Kozik, Graduated Su 2017
- Andrew Kleinberg, Graduated Su 2017

### *FSU UNDERGRADUATE RESEARCH ADVISEES*

- Jane Wadhams, September 2018- August 2021 – EROP, MagLab REU, Honors Thesis (Graduated)
- Allison Brown, January 2019-August 2020 (Graduated)
- Adam Karl, September 2018-August 2019 (Graduated)
- Brett Faran, June 2018-December 2019 – MagLab REU (Graduated)
- Dalton Langford, Oct 2017-May 2018 (Graduated)
- Travis Spake, Sept 2017-Dec 2017 (Graduated)
- Ashley Prow, Sept 2016-Aug 2017 (Graduated)
- Mary Powell, Mar 2016-May 2017 – MagLab REU (Graduated)
- John Sutton, Jan 2016-Aug 2016 (Graduated)

### *EXTERNAL GRADUATE ADVISEES*

- Chadlin Ostrander (PhD), Arizona State University, Jul 2016-present
- Bridget Lee (MS and PhD), University of California, Riverside, Aug 2013-present

### *PREVIOUS ADVISEES*

- Mackensy Farmer (MS), California State University, San Bernardino, Jul 2012
- Angela Gerhardt (Senior Thesis), University of California, Riverside, 2012
- Mahnoor Rahman and Nicole Perifoy (Awarded Science Fair), Martin Luther King High School, 2011

## **SIGNIFICANT PROFESSIONAL SERVICES & ACTIVITIES**

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### *FSU*

- Faculty hiring committee, member 2021-2022 (x2)
- TA committee, member 2020-present
- Faculty hiring committee, member 2020-2021
- Space and building committee, member 2018-present

## **JD Owens – CV**

- Colloquium committee, member 2018-present
- Graduate Entrance Advising committee, member 2017-present
- Laboratory fees committee, member 2017-2019
- Environmental Science curriculum, member 2016-present
- Environmental Science graduate program task force, member 2016-2017
- Website re-design committee, chair 2016-2021

### ***PANELIST***

International Ocean Discovery Program - Science Evaluation Panel 2021-present (2 panels a year)  
National Aeronautics and Space Administration– Exobiology and sub-panel chair (x2)  
National Science Foundation – Division of Ocean Sciences (x2)

### ***EDITORIAL***

Guest Editor for *Geochimica et Cosmochimica Acta* Special Issue on Proxy Development

### ***PEER REVIEWER***

#### *Grant Agencies*

American Chemical Society • Austrian Science Funds • Canadian Research Council • German National Science Foundation • IODP Science Evaluation Panel • Lewis and Clark Astrobiology • National Aeronautics and Space Administration • National Science Foundation • Natural Environmental Research Council • Swiss National Science Foundation

#### *Journals/Books*

American Chemical Society Earth and Space Chemistry • American Geophysical Union Book Proposal Review • American Journal of Science • Biogeosciences • Chemical Geology • Chemie der Erde – Geochemistry • Climate of the Past • Continental Shelf Research • Earth and Planetary Science Letters • Earth-Science Reviews • Elements Book Review • Environmental Science and Technology • Frontiers • Geochimica et Cosmochimica Acta • Geology • Geochemistry, Geophysics, Geosystems • Geological Society of American Bulletin • Global and Planetary Change • Nature • Nature Communications • Nature Geosciences • Nature Scientific Reports • Paleocyanography • Palaeogeography, Palaeoclimatology, Palaeoecology • Paleoworld • Precambrian Research • Proceeding of the National Academy of Sciences • Revue de Micropaléontologie • Science Advances

### ***INVITED TALKS***

2022 – Northwestern, Auburn (currently scheduled)  
2021 – PASSHE Earth & Environmental Science Seminar  
2020 – Geological Society of America (x2)  
2018 – Goldschmidt, Florida State University EOAS, Florida State University Biology  
2016 – University of Florida, Oklahoma State University, Florida State University Fluids  
2015 – Washington University – St. Louis, Florida State University, AGU  
2014 – University of Leeds, University Massachusetts – Amherst  
2012 – Woods Hole Oceanographic Institution

### ***SCIENTIFIC MEETING CONVENER/SESSION CHAIR***

- Southeast GSA 2019, 2021
- Goldschmidt 2012, 2018, 2019
- GSA 2016, 2018
- AGU 2014
- WHOI Paleoclimate Seminar Series 2014–2015
- Southern California Geobiology Symposium 2009

***SCIENTIFIC OUTREACH COMMUNITY ACTIVITIES***

- Young Engineers - Tallahassee – Geology Rocks (7/20/21)
- MagLab Open House – Scientist Speed Session – What is a paleo oceanographer and how can they use research to understand Earth's ancient past? (3/2/21)
- Science Café – Ancient Climate Change: The Connection Between Marine Deoxygenation and Extinction Events (10/27/20)
- Science Café - Biological Evolution During Major Climatic Events (1/28/2020)
- Citizen Climate Lobbyist – The extended impact of climate change and additional systems affect: A geological perspective on modern climate change (11/20/2019)
- Challenger Learning Center – Deciphering Climate Change Throughout Geological History: How the Modern Record is Unprecedented (5/21/2019)
- Radio Interview – The Attitude with Arnie Arnesen – (10/20/2018; [link](#))
- Popular Science Article – Volcanic eruptions once caused mass extinctions in the oceans – could climate change do the same? (2018) *The Conversation* ([link](#))
- Innovation Park, Invited Speaker – Fingerprinting marine deoxygenation through geologic history (2018)
- TEDxFSU, Invited Speaker – Fingerprinting climate (2018)
- Lincoln High, Guest Speaker, Chemistry and Marine Science (2018)
- Mote Marine Laboratory & Aquarium –Fingerprinting Earth’s climate through history – How modern climate change is unprecedented (2018)
- NNOCCI Science Board Member (2018)
- Water Symposium, Invited Speaker–Deciphering Ancient Climate Change to Better Understand Future Effects on Our Oceans (2017)
- National High Magnetic Field Laboratory Open House – Fingerprinting Geologic History (2015-ongoing)
- MarineLand–Fingerprinting Earth’s climate through history – How modern climate change is unprecedented (2017)
- New England Aquarium–A geologic detective: investigating climate change (2015)
- Orleans Conservation Trust–Linking Earth's climate history to changes we see today (2015)
- Video–The story in rocks (2015)
- Designed carbon cycle lab, Beaumont High School (2013)

***PROFESSIONAL SOCIETIES***

American Geophysical Union • Geochemical Society • Geological Society of America