Curriculum Vitae

Noah Planavsky
Assistant Professor
Department of Geology and Geophysics, Yale University

Education:
B.A. (*summa cum laude*), Lawrence University 2002-2006
Ph.D., University of California Riverside, 2007-2012, (Advisor: Tim Lyons)
Postdoctoral Fellow, California Institute of Technology, 2012-2013 (Advisor: Woodward Fischer)

Research Positions: Visiting researcher; Institut de Physique du Globe de Paris, Summer-Winter 2009, Advisor—Vincent Busigny; Guest investigator, Woods Hole Oceanographic Institute, Summer, Winter 2006, Advisor—Olivier Rouxel; Research Associate Rosenstiel School of Marine and Atmospheric Sciences, Fall 2006, Spring-Summer 2007, Advisor—Robert Ginsburg.

Selected Honors, Awards, and Fellowships: F.W. Clarke Medal, 2108; National Academy of Sciences Kavli Fellow, 2017; Packard Fellowship, 2016; Sloan Research Fellow, 2016; Institut de Physique du Globe de Paris 'Campagne des Invités' Fellowship, 2014; NSF Postdoctoral Fellowship, 2012; Marie Curie Postdoctoral Fellowship, 2012; University of California Dissertation Year Fellowship, 2011; Geological Society of America Research Award, 2011 and 2009; Society for Sedimentary Geology Research Award, 2010 and 2011; NASA Astrobiology Research Scholarship, 2009; American Philosophical Society Lewis and Clark Exploration Award, 2008; National Science Foundation Graduate Research Fellowship, 2008-2010; University of California Chancellor's Fellowship, 2007; Institute on Lake Superior Geology Student Research Grant, 2007; Woods Hole Oceanographic Institute Summer Student Fellowship, 2006; Best student paper award, Institute on Lake Superior Geology, 2006; Lawrence University Excellence in Science award, 2006; Ocean Research and Education Summer Fellowship, 2005.

Major External Grant Support: NSF Earth Life Transition Program grant (Co-I, 2012); Connecticut Space Grant (PI, 2014); NASA "Alternative Earths" Astrobiology Institute (Institutional PI, 2015). NIH (Co-I, 2015); NASA Exobiology Program grant (PI, 2016); Sloan Research Fellowship (PI, 2016); Packard Foundation Fellowship (PI, 2016).

Professional Affiliations: American Geophysical Union, Geochemical Society, Geological Society of America

Professional Activities and Outreach: Associate Editor at *Geobiology* (2013-), *Global Biogeochemical Cycles* (2017-), and *American Journal of Science* (2016-). Reviewer for: *American Journal of Science; Chemical Geology; Earth and Planetary Science Letters; Earth and Sspace Science; Earth Science Reviews; Geobiology; Geochimica et Cosmochimica Acta; Geology; Gondwana Research; Geological Journal; Geological Society of London Special Publications; Nature; Nature Communications; Nature Geoscience; Palaios; Precambrian Research; Science*, *Science Advances, Scientific Reports; Sedimentology; Sedimentary Research*. Session organizer for: AbiSciCon2011, 2015; EGU, 2014; GSA 2014, 2017; AGU 2014; GAC-MAC 2015; Goldschimdt 2013-2016. Mentor for the 2013 GEOP high school science research opportunities program (students' project received honorable mention at the California State Science fair). Science Advisory Board for Bahamas Marine EcoCentre (2016-). Contributor to the BBC series "The Human Universe" (2014). Contributor to the PBS series NOVA (2016).

Courses Taught (Yale): Biogeochemical Cycles through Time; Paleoenvironments; Topics in Geobiology; Geoscience Writing; Alternative Earths; Tutorial in Sedimentology; Seminar in Lithosphere and Surface Processes; Earth Surface Processes; Regional Perspectives on Global Geoscience; Paleoclimate; Hutchinson, Ecology, and the Earth System; The Global Carbon Cycle; Isotope Geochemistry

Doctoral Students Supervised (major advisor): Devon Cole (current PhD candidate); Boriana Kalderon-Asael (current PhD student); Terry Tang (current PhD candidate); Eric Bellefroid (graduated PhD student); Shuang Zhang (graduated PhD student; currently a Post-doc at Yale).

Post-Doctoral Researchers Supervised: Bleuenn Gueguen (currently National Center for Scientific Research (CNRS) Research Scientist; Université de Bretagne Occidentale); Ashleigh Hood (currently a faculty member at University of Melbourne); Ryan McKenzie (currently faculty member at University of Hong Kong); Jun Shen (currently a faculty member at China University of Geosciences); Xiangli Wang (current currently a faculty member at University of Southern Alabama); Shuang Zhang (current post-doc); Ming-Yu Zhao (current post-doc).

Scientific Publications:

120. Jiang, L, **Planavsky, NJ**, Zhao, M, Liu, W, Wang, X, in press, An authigenic origin for a massive negative carbon isotope excursion, Geology.

119. Gothmann A, Higgins, JA, Adkins, JF, Broecker, W, Farley, KA, McKeon, R, **Planavsky, NJ**, Jaroslaw Stolarski, J, Xiangli Wang, X, Bender, ML, in press, Uranium geochemistry of well-preserved aragonitic fossil corals. Geochimica et Cosmochimica Acta.

117. Isson, TT, **Planavsky, NJ**, 2018, Reverse weathering as a long-term stabilizer of marine pH and planetary climate. Nature 560, 471-473.

116. Wang, X, **Planavsky, NJ,** Hofmann, A, Saupe, EE, De Corte, BP, Philippot, P, LaLonde, SV, Jemison, NE, Zou, H, Ossa Ossa, F, Rybacki, K, Alfimova, N, Larson, MJ, Tsikos, H, Fralick, PW, Johnson, TM, Knudsen, AC, Reinhard, CT, Konhauser, KO, 2018, A Mesoarchean shift in uranium isotope systematics. Geochimica et Cosmochimica Acta. 238 438-452.

115. **Planavsky, NJ**, Cole, DB, Isson, TT, Reinhard, CT, Crockford, PW, Sheldon, ND, Lyons, TW, 2018, A case for low atmospheric oxygen levels during Earth's middle history. Emerging Topics in Life Sciences. 2, 149-159.

114. Bellefroid, EJ, Hood, AS, Hoffman, PF, Thomas, MD, Reinhard, CT, **Planavsky, NJ**, 2018, Constraints on Paleoproterozoic atmospheric oxygen levels. Proceedings of the National Academy of Sciences. 115, 8104-8109

113. Miyazaki, Y, **Planavsky, NJ**, Bolton, EW, Reinhard, CT, 2018, Making sense of massive carbon isotope excursions with an inverse carbon cycle model. Journal of Geophysical Research: Biogeosciences, 123, 2485-2496.

112. Jin, C, Li, C, Algeo, TJ, O'Connell, B, Cheng, M, Shi, W, Shen, J, **Planavsky, NJ,** 2018, Highly heterogeneous "poikiloredox" conditions in the early Ediacaran Yangtze Sea. Precambrian Research. 311, 157-166.

111. Wei, GY, **Planavsky, NJ**, Tarhan, LG, Chen, X, Wei, W, Li, D, Ling, HF, 2018, Marine redox fluctuation as a potential trigger for the Cambrian explosion, Geology 46, 735-735.

110. Zhang, S, **Planavsky, NJ**, Krause, AJ, Bolton, EW, Mills, BJW, 2018, Model based Paleozoic atmospheric oxygen estimates: Revisting GEOCARBSULF. American Journal of Science. 318, 557-589.

109. Lechte, ML, Malcolm, WW, Hood, AVS, **Planavsky, NJ,** 2018, Cryogenian iron formations in the glaciogenic Kingston Peak Formation, California. Precambrian Research. 310, 443-462.

108. Ossa Ossa, F, Eickmann, B, Hofmann, A, **Planavsky, NJ**, Asael, D, Pambo, F, Bekker, A, 2018, Two-step deoxygenation at the end of the Paleoproterozoic Lomagundi Event. Earth and Planetary Science Letters. 486. 70-83.

107. Mloszewska, AM, Cole, DB, **Planavsky, NJ**, A Kappler, DS Whitford, Whitford, DS, Owttrim, GW, Konhauser, KO, UV radiation limited the expansion of cyanobacteria in early marine photic environments. Nature communications 9, 3088.

106. **Planavsky, NJ**, 2018, From Orogenies to Oxygen. Nature Geoscience.11, 9-11.

105. **Planavsky, NJ**, Slack, JF, Cannon, WF, O'Connell, B, Terry-Tang, Y, Asael, D, Jackson, JC, Hardisty, DS, Lyons, TW, Bekker, A, 2018, Evidence for episodic oxygenation in a weakly redox buffered deep mid-Proterozoic ocean. Chemical Geology. 483, 581-594.

104. Li, Z, Zhang, LC, Zheng, MT, Zhu, MT, Robbins, LJ, **Planavsky, NJ**, Konhauser, KO, 2018, Earth's youngest banded iron formation implies ferruginous conditions in the Early Cambrian ocean. Scientific Reports, 8, 9970.

103. Busigny, V, **Planavsky, NJ**, Goldbaum, E, Lechte, MA, Feng, L, Lyons, TW, Origin of the Neoproterozoic Fulu iron formation, South China: Insights from iron isotopes and rare earth element patterns. Geochimica et Cosmochimica Acta. 242, 123-142.

102. Zhao, M, **Planavsky, NJ**, Wei, G, Gong, Z, Oehlert, A, in review, Revisiting the effects of meteoric and mixing zone carbonate diagenesis with a two-dimensional reactive transport model. American Journal of Science.

101. Diamond, CW, **Planavsky, NJ**, Wang, C, Lyons, TW, 2018, What mid-Proterozoic shales can and cannot tell us about the mid-Proterozoic ocean. Geobiology. 16, 219-236.

100. Isson, TT, Love, GD, Zumberge, A, Reinhard, CT, Dupont, CL, Asael, D, Rooney, AD, Gill, BC, Rainbird, RH, McCrow, JP, Lyons, TW, **Planavsky, NJ**, 2018, Tracking the Rise of Eukaryotes to Ecological Dominance with Zinc Isotopes. Geobiology. 16, 341-352.

99. Bellefroid, EJ, **Planavsky, NJ**, Miller, NR, Brand, U, Wang, C, 2018, Case studies on the utility of sequential carbonate leaching for radiogenic strontium isotope analysis. Chemical Geology 497, 88-99

98. Cole, DB, O'Connell, B, **Planavsky, NJ**, 2018, Authigenic chromium enrichments in Proterozoic ironstones, Sedimentary Geology. 372, 25-43.

97. Colleps, C, McKenzie, R, Stockli, S, Hughes, N, Singh, B, Webb, A, Myrow, P, **Planavsky, NJ**, Horton, B, 2018, Zircon (U-Th)/He thermochronometric constraints on Himalayan thrust belt exhumation, bedrock weathering, and Cenozoic seawater chemistry, Geochemistry, Geophysics, Geosystems. 19, 257–271.

96. Hardisty, DS, Lyons, TW, Riedinger, N, Isson, TT, Owens, JD, Aller, RC, Rye, DM, **Planavsky, NJ**, Reinhard, CT, Gill, BC, Masterson, AL, Johnston, D, 2018, An evaluation of sedimentary molybdenum and iron as proxies for pore fluid paleoredox conditions. American Journal of Science 318, 527-556.

95. Konhauser, KO, Robbins, LJ, Alessi, DS, Flynn, SL, Gingras, MK, Martinez, PE, Kappler, A, Swanner, ED, Yi-Liang Li, YL Crowe, SA, **Planavsky, NJ**, Reinhard, CT, Lalonde, SV, 2018, Phytoplankton contributions to the trace element composition of Precambrian banded iron formation. GSA Bulletin. 130, 941-951.

94. Zhao, MY, Reinhard, CT, **Planavsky, NJ**, 2018, Terrestrial methane fluxes and Proterozoic climate. Geology. 46, 139-142.

93. Gaschnig, R, Reinhard, CT, **Planavsky, NJ**, Wang, X, Asael, D, Chauvel, C, 2018, The molybdenum isotope system as a tracer of slab input in subduction zones: An example from Martinique, Lesser Antilles arc. Geochemistry, Geophysics, Geosystems. 18, 4674–4689.

92. Reinhard, CT, **Planavsky, NJ**, in review, Nutrient cycling and the evolution of planetary biospheres. Astrobiology

91. Krause, AJ, Mills, BJW, Zhang, S, **Planavsky, NJ**, Lenton, TM, Poulton, SW, 2018 Stepwise oxygenation of the Paleozoic atmosphere. Nature communications. 9, 4081.

90. Bauer, KW, Cole, DB, Francois, R, Poulton, SW, **Planavsky, NJ**, Crowe, SA, in review, Oxidative diagenesis fractionates chromium isotopes in hydrothermal sediments. Chemical Geology.

89. Zhang, S, **Planavsky, NJ**, in press, The silicate weathering feedback from 52 to 42 Ma. American Journal of Science.

88. Hood, Av.S, **Planavsky, NJ**, Wallace, MW, Wang, X, 2018, The effects of diagenesis on geochemical paleoredox proxies in sedimentary carbonates. Geochimica et Cosmochimica Acta. 232, 265-287.

87. Cockford, P, Hayles, J, Bao, H, **Planavsky, NJ,** Bekker, A, Frallick, PW Halverson, GP, Bui, TH and Wing, BA, 2018, Triple oxygen isotope evidence for limited mid-Proterozoic primary productivity. Nature. 599, 613-616.

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85. Cole, DB, Wang, X, Qin, L, Reinhard, CT, **Planavsky, NJ**, 2017, Chromium isotopes. in Encyclopedia of Geochemistry, ed. White, W.

84. Raiswell, R, Hardisty, DS, Lyons, TW, Canfield, DE, Owens, JD, **Planavsky, NJ**, Poulton, SW, Reinhard, CT, in revision, The iron paleoredox proxies: A guide to proper practice, pitfalls, and problems. American Journal of Science.

83. Liu, K, Feng, Q, Shen, J, **Planavsky, NJ,** Khan, MZ, 2017, Increased productivity as a primary driver of marine anoxia in the Lower Cambrian. Palaeogeography, Palaeoclimatology, Palaeoecology. 419, 1-9.

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81. Cole, DB, Zhang, S, **Planavsky, NJ**, 2017, A New estimate of detrital redox-sensitive metal concentrations and variability in marine sediments. Geochimica et Cosmochimica Acta. 215, 337-353.

80. Tarhan, LG, **Planavsky, NJ**, Wang, X, Bellefroid, EJ, Droser, ML, Gehling, JG, 2017, Late-stage 'Ferruginization' of the Ediacara Member (Rawnsley Quartzite, South Australia): Insights from uranium isotopes, Geobiology. doi: 10.1111/gbi.12262.

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78. **Planavsky, NJ**, Busingy, V. 2018, Iron isotopes, in Encyclopedia of Geochemistry, ed. White, W.

77. McCoy, T., **Planavsky, NJ**, Asael, D, 2017, Iron isotopes in a high-oxygen, low-sulfate environment: implications for interpreting Archean sedimentary iron isotope excursions. Geobiology. 15, 619–627.

76. Li, C, Jin, C, **Planavsky, NJ,** Algeo, TJ, , Cheng, M, Yang, X, Zhao, Y, Xie, S. 2017, Coupled oceanic oxygenation and metazoan diversification during the early–middle Cambrian? Geology. 45, 743-746.

75. Wang X, **Planavsky, NJ**, Hull, PM, Tripati, AE, Zou, H, Elder, L, Henehan, M, 2017, Chromium isotopic composition of core-top planktonic foraminifera. Geobiology. 15, 51-64.

74. Konhauser, KO, **Planavsky, NJ**, Hardisty, D, Robbins, L, Warchola, T, Haugaard, R, Lalonde, S, Partin, C, Paul Oonk, P, Tsikos, H, Lyons, TW, Bekker, A, Johnson, C, 2017, Iron formations: A record of Neoarchean to Paleoproterozoic Environmental History. Earth Science Reviews. vol. 172 pp. 140-177.

73. Stüeken, EE, Buick, R, **Planavsky, NJ**, Lyons, TW, 2017, Environmental niches and biodiversity in Neoarchean lakes. Geobiology. 15, 767-783.

72. Wallace, MW, Hood, AV, Shuster, A, **Planavsky, NJ**, Greig, AJ, 2017, Oxygenation history of the Neoproterozoic to early Phanerozoic and the rise of land plants, Earth and Planetary Science Letters 466, 12-19.

71. Wu W., Wang, X. Reinhard, C.T., **Planavsky, NJ**, 2017, Chromium isotope systematics in temperate weathering environments: A case study of the Connecticut River System. Chemical Geology, 456, 98–111.

70. Louyakis, AS, Mobberley, JM, Vitek, B, Hagan, PD, Reid, RP, **Planavsky, NJ,** Kozdon, R, Orland, I, Valley, JW, Visscher, PT, Casaburi, G, Foster, JS, 2017, Spatial heterogeneity of thrombolites using molecular, biochemical, and stable isotope analyses. Astrobiology, 17, 413-430.

69. Zhang, S, Henehan, M, Hood, A, Hardisty, D, Reid, RP, Hull, P, **Planavsky, NJ**, 2017, Investigating controls on boron isotope ratios in shallow marine carbonates. Earth and Planetary Science Letters. 458, 380–393.

68. Fralick, P, **Planavsky, NJ,** Burton, J, Addison, B, Barrett, T, Brumpton, G, Jarvis, I, 2017, Geochemistry of Paleoproterozoic Gunflint Formation carbonate: implications for hydrosphere-atmosphere evolution. Precambrian Research. 290, 126–146.

67. Korenaga, J, **Planavsky, NJ,** Evans, DAD, 2017, Global water cycle and the coevolution of Earth's interior and surface environment. Philosophical Transactions A. 375(2094).

66. Reinhard, CT*, **Planavsky, NJ***, Gill, BC, Ozaki, K, Robbins, LJ, Lyons, TW, Fischer, WW, Wang, C, Cole, DB, Konhauser, KO, 2017, Evolution of the global phosphorous cycle. Nature. 541, 386–389.
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65. Hanberg, JS, Rao, V, ter Maaten, JM, Laur, O, Brisco, MA, Wilson, FP, Grodin, JL, Assefa, M, Broughton, JS, **Planavsky, NJ,** Ahmad, T, Bellumkonda, L, Tang, WHW, Parikh, CR, Testani, JM. 2016, Hypochloremia and Diuretic Resistance in Heart Failure. Circulation: Heart Failure. 9, 003180.

64. Busigny, V, Jézéquel, D, Cosmidis, J, Viollier, E, Benzerara, K, **Planavsky, NJ**, Albéric, P, Lebeau, O, Sarazin, G, Michard, G, 2016, The Iron Wheel in Lac Pavin: Interaction with Phosphorus Cycle, in Lake Pavin. eds. Sime-Ngando, T., et al., Springer, pp. 205-220.

63. **Planavsky, NJ**, Cole, DB, Reinhard, CT, Zhang, S, Diamond, C, Love, GL, Konhauser, K, Lyons, TW, 2016, No evidence for high atmospheric oxygen levels 1400 million years ago. Proceedings of the National Academy of Sciences. 113, 2550–2551.

62. Hood, AvS, **Planavsky, NJ**, Wallace, MW, Wang, X, Bellefroid, E, Gueguen, B, Cole, DB, 2016, Integrated geochemical-petrographic insights from component-selective $\delta^{238}U$ of Cryogenian marine carbonates. Geology. 44, 951-954.

61. Sahoo, SK, **Planavsky, NJ**, Jiang, GQ, Kendall, B, Owens, JG, Wang, XQ, Shi, XY, Anbar, AD, and Lyons, TW, 2016, Oceanic oxygenation events (OOEs) in the anoxic Ediacaran ocean. Geobiology. 14, 457–468.

60. Hardisty, DS, Riedinger, N, **Planavsky, NJ**, Asael, D, Andrén, T, Jørgensen, BB, Lyons, TW, 2016, A Holocene history of dynamic water column redox conditions in the Landsort Deep, Baltic Sea. American Journal of Science. 316, 713-745.

59. Suosaari, EP, Reid, RP, Playford, PE, Foster, JS, Stolz, JF, Casaburi, G, Hagan, PD, Chirayath, V, Macintyre, IG, **Planavsky, NJ**, Eberli, GP, 2016, New multi-scale perspectives on the stromatolites of Shark Bay, Western Australia. Scientific Reports. 6.

58. Anderson, R, Tarhan. LG, Cummings, K, **Planavsky, NJ**, Bjørnerud, M, 2016, Macroscopic structures in the 1.1 Ga continental Copper Harbor Formation: Concretions or fossils? Palaios. 31, 327-338.

57. Reinhard, CT, **Planavsky, NJ**, Olson, SL, Lyons, TW, Erwin, DH, 2016, Causal relationships between earth's oxygen cycle and the evolution of metazoan life. Proceedings of the National Academy of Sciences. 113, 8933–8938.

56. Cole, DB, Reinhard, CT, Wang, X, Gueguen, B, Halverson, GP, Lyons, TW, **Planavsky, NJ**, 2016, A shale-hosted Cr isotope record of low atmospheric oxygen during the Proterozoic. Geology. 44, 555-558.

55. Robbins, LJ, Lalonde, SV, **Planavsky, NJ**, Partin, CA, Reinhard, CT, Kendall, B, Scott, C, Hardisty, DS, Gill, BC, Alessi, DS, Dupont, CL, 2016. Trace elements at the intersection of marine biological and geochemical evolution. Earth-Science Reviews.

54. Gueguen, B, Reinhard, CT Algeo, TJ, Peterson, LC, Nielsen, SG, Wang, X, **Planavsky, NJ**. 2016. The chromium isotope composition of reducing and oxic marine sediments. Geochimica et Cosmochimica Acta. 184, 1-19.

53. Jin, C, Li, C, Algeo, TJ, **Planavsky, NJ**, Cui, H, Yang, X, Zhao, Y, Zhang, X, Xie, S, 2016, A highly redox-heterogeneous ocean in South China during the early Cambrian (~529-514 Ma): Implications for biota-environment co-evolution. Earth and Planetary Science Letters. 441, 38-51.

52. McKenzie, NR, Horton, BK, Loomis, SE, Stockli, DF, **Planavsky, NJ**, Lee, CTA, 2016, Continental arc volcanism as the principal driver of icehouse–greenhouse variability. Science. 352, 444-447.

51. Shen, J, Feng, Q, Algeo, TJ, Li, C, **Planavsky, NJ**, Zhou, L, Zhang, M, 2016, Two pulses of oceanic environmental disturbance during the Permian–Triassic boundary crisis. Earth and Planetary Science Letters 443, 139-152.

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48. Wang, X, Reinhard, CT, **Planavsky, NJ,** Owens, JD, Lyons, TW, Johnson, TM, 2016, The chromium isotope system tracks bottom-water redox across the Cretaceous OAE2 at Demerara rise site 1258. Chemical Geology. 429, 85–92.

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*Equal contribution authors

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Superbasin, Australia: an investigation into sedimentary and microbial control of stromatolite morphology. Geobiology, 6, 33-45.

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Selected Invited Talks:

Planavky, NJ, 2018, What we talk about when we talk about Reverse Weathering, Utah State University, Logan, USA.

Planavsky, NJ, 2018, A case for low Proterozoic surface oxygen levels, University of Arizona, Tucson, USA.

Planavky, NJ, 2018, Controls on Earth's Long Term Climate, Stanford, Palo Alto, USA.

Planavsky, NJ, 2017, Biotic controls on Earth's Climate, UC-Davis, Davis, USA

Planavsky, NJ, 2017, Proterozoic Greenhouse Gases, Penn State, State College, USA

Planavsky, NJ, Reinhard, CT, Bolton, E, Terry-Tang, Y**,** 2017, Organic and Carbonate Carbon Burial Through Earth's History. Goldschmidt 2017, Paris, France.

Planavsky, NJ, 2016, The Evolution Global Carbon Cycle. Princeton University, Princeton, USA.

Planavsky, NJ, 2016, Tracking the rise of eukaryotes and land plants. University of Michigan, Ann Arbor, USA.

Planavsky, NJ, 2016, Earth's atmosphere through time. Rutgers University, New Brunswick.

Planavsky, NJ, 2016, Can we paint a clear picture of Earth's oxygenation (Keynote), Goldschmidt 2016, Yokohama, Japan.

Planavsky, NJ, 2015, Earth's oxygenation. Rice, Department of Earth and Planetary Sciences, Houston, USA.

Planavsky, NJ, 2015, New insights into Earth's oxygenation. MIT, Department of Earth and Planetary Sciences, Cambridge, USA.

Planavsky, NJ, 2014, A Cr and U record of Archean Oxygen levels. AGU Fall meeting. San Francisco, USA.

Planavsky, NJ, 2014, Utility of Metal Isotopes as Redox Tracers, Université Libre de Bruxelles, Laboratoire G-Time, Belgium.

Planavsky, NJ, 2013**,** Oxygen and Life – Can we paint a clear picture? Harvard University, Department of Earth Sciences, Cambridge, Ma, USA.

Planavsky, NJ, 2013**,** New insights into Earth's oxygenation. University of Oxford, Department of Earth Sciences, Oxford, UK.

Planavsky, NJ, 2013**,** The utility of Cr isotopes. University of Nevada, Las Vegas, Geosciences Department, Las Vegas, NV, USA.

Planavsky, NJ, 2012**,** What we talk about when we talk about Earth's oxygenation. Dartmouth College, Biology Department, Hanover, NH, USA.

Planavsky, NJ, 2012**,** Proterozoic Redox Evolution, GAC-MAC 2012, St. John's, Canada.

Planavsky, NJ, 2011**,** Tracking the oxidation of the Earth's Surface, Frontiers in Earth Surface System Interactions Symposium, Yale University, New Haven, CT, USA.

Planavsky, NJ, Bekker A, Lyons, TW, 2010, High rates of primary productivity in the aftermath of the rise in atmospheric oxygen, Goldschmidt 2010, Knoxville, TN, USA.

Planavsky, NJ, Bekker A, Lyons, TW, 2010, High rates of primary productivity in the aftermath of the rise in atmospheric oxygen: Insights from the Lomagundi Formation, Zimbabwe, GAC-MAC 2010, Calgary, AB, Canada.

Planavsky, NJ, 2009, Insights from iron formations into the coevolution of the Earth's biosphere and redox state. Institut de Physique du Globe de Paris, Laboratoire de Géochimie et Cosmochimie, Paris, France.

Planavsky, NJ, 2009, The evolution of the marine phosphorous cycle through time, University of Manitoba, Department of Geological Sciences, Winnipeg, MB, Canada.