

Robert E. Kopp

Curriculum Vitae

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Education

Ph.D. (Geobiology), California Institute of Technology, Pasadena, CA June 2007
M.S. (Geobiology), California Institute of Technology, Pasadena, CA June 2005
NSF and Harrison Brown Memorial Moore Graduate Research Fellowships
Student, Agouron Geobiology Summer Course, USC Wrigley Institute, Catalina Island, CA July 2004
S.B. (Geophysical Sciences), University of Chicago, Chicago, IL June 2002
General and Departmental Honors; Junior Phi Beta Kappa; Student Marshal

Professional Appointments

Director, Institute of Earth, Ocean and Atmospheric Sciences, Rutgers University, New Brunswick, NJ 2017-
Professor of Earth & Planetary Sciences, Rutgers University, New Brunswick, NJ 2017-
Associate Director, Rutgers Energy Institute, Rutgers University, New Brunswick, NJ 2011-2017
Associate Professor of Earth & Planetary Sciences, Rutgers University, New Brunswick, NJ 2014-2017
Assistant Professor of Earth & Planetary Sciences, Rutgers University, New Brunswick, NJ 2011-2014

Additional Rutgers affiliations: Rutgers Climate Institute

Rutgers graduate faculties: Atmospheric Sciences, Geological Sciences, Oceanography, Statistics, Planning & Public Policy (Associate)

AAAS Science & Technology Policy Fellow, Office of Climate Change Policy & Technology, Office of Policy & International Affairs, U.S. Department of Energy, Washington, DC 2009-2011

Science, Technology & Environmental Policy Postdoctoral Fellow, Woodrow Wilson School of Public & International Affairs and Department of Geosciences, Princeton University, Princeton, NJ 2007-2009

Graduate Research Fellow, California Institute of Technology, Pasadena, CA 2002-2007

Undergraduate Research Assistant, University of Chicago, Chicago, IL 1999-2002

Teaching Experience

Rutgers University

- 16:218:502 *Transdisciplinary Perspectives on Coastal Climate Risk and Resilience*, spring 2017, fall 2017 (co-taught with Prof. Rebecca Jordan and Carrie Ferraro)
- 01:460:203 *Building and Maintaining a Habitable Planet*, fall 2013–2016
- 11:090:101 *Byrne [First-Year] seminar on Manufacturing Uncertainty: The Climate Denial Machine*, fall 2016 (co-taught with Prof. Rachael Shwom)
- 16:460:571 / 16:107:571 / 34:970:663 *Climate Change Risk Analysis*, spring 2016 (co-taught with Prof. Enrique Curchitser)
- 16:460:629 / 33:833:685 *Graduate seminar on Assessing and Governing Long-Term Risks*, spring 2015 (co-taught with Prof. Rachael Shwom)
- 16:460:629 / 33:833:685 *Graduate seminar on Assessing the Economic Risks of Climate Change*, spring 2014 (co-taught with Prof. Enrique Curchitser)
- 01:566:143 *Energy and Climate Change*, fall 2015, co-instructor

- 16:460:611 *Joint Rutgers-Princeton Graduate Seminar: Geological constraints on climate sensitivity*, spring 2013 (co-taught with Prof. John Higgins)
- 01:090:252 *School of Arts & Sciences Honors Program Interdisciplinary Seminar: The Evolution of the Global Energy System—From Earth's Deep Past to Civilization's Future*, fall 2012
- 16:460:613 *Graduate seminar on Major Transitions in the Evolution of the Global Carbon Cycle*, spring 2012 (co-taught with Prof. Dennis Kent)
- 11:546:196 *School of Environmental & Biological Sciences Honors Seminar: State of the Planet*, instructor for week on energy issues, spring 2012

California Institute of Technology

- *Ge 11b: Earth and Biosphere* (undergraduate) and *Ge 104: Introduction to Geobiology* (graduate), teaching assistant for Prof. Joseph Kirschvink, winter 2005 and winter 2006
- Geological & Planetary Sciences division field trip to Yellowstone National Park and surrounding areas, co-coordinator, summer 2005
- *Ge 124: Paleomagnetism and Magnetostratigraphy*, teaching assistant for Prof. Joseph Kirschvink, spring 2005
- *Ge 136: Regional Field Geology of the Southwestern U.S.*, coordinated Colorado Plateau weekend field trip classes for Prof. Joseph Kirschvink, spring 2005
- Geological & Planetary Sciences division field trip to Western Australia, co-coordinator, summer 2004
- *Ge 136: Regional Field Geology of the Southwestern U.S.*, coordinated southwestern Utah weekend field trip classes for Prof. Joseph Kirschvink, spring 2004
- *ACM 118: Methods in Applied Statistics and Data Analysis*, teaching assistant for Prof. Tapio Schneider, fall 2003

Related Consulting and Advisory Experience

Sea-Level Rise Expert Group Member, New York City Panel on Climate Change	2017
Sea-Level Rise Expert Panel Author, California Ocean Protection Council	2017
Lead Author, U.S. Global Change Research Program Climate Science Special Report	2016–2017
Committee Member, National Academies Project on Assessing Approaches to Updating the Social Cost of Carbon	2015–2017
Sea-Level Rise Expert Committee Member, Fourth California Climate Change Vulnerability and Adaptation Assessment	2016
Working Group Member, Sea-Level Rise Working Group, Boston Research Advisory Group	2015–2016
Chair, Science and Technical Advisory Panel on Sea-Level Rise and Coastal Storm Risk, New Jersey Climate Adaptation Alliance	2015–2016
External Reviewer, New Hampshire Coastal Risks and Hazards Commission Scientific Advisory Panel	2014
External Reviewer, New York City Panel on Climate Change	2014
Lead Scientist, <i>American Climate Prospectus: Economic Risks in the United States</i> (Independent risk assessment for the Risky Business Project)	2013–2014
Member, Sea-Level Rise Expert Group, Maryland Climate Change Commission	2013

Advisory and Review Board Member, Climate Tipping Points Study, PESETA II Project, European Commission Joint Research Centre 2012

Woodrow Wilson School of Public & International Affairs Workshop, consulting for Office of Air and Radiation, Environmental Protection Agency 2008–2009
 Report co-author, *Black Carbon: A Review and Policy Recommendations*
 Lead author of chapter on “The role of black carbon in climate change”

Scientific Assessment Panel advising the Delta Committee of the Dutch Cabinet 2008
 Report co-author, *Exploring high-end climate change scenarios for flood protection of the Netherlands*; Lead author of section on “Paleo-climatological perspective”

Academic Service

Member, Board on Atmospheric Sciences and Climate, National Academies of Sciences, Engineering, and Medicine 2017–

AGU Ocean Sciences Meeting 2018 Program Committee 2017

Intergovernmental Panel on Climate Change Sixth Assessment Report Scoping Meeting Participant 2017

Co-Director, Coastal Climate Risk & Resilience (C2R2) Initiative, Rutgers University 2016–

Associate Deputy Editor, *Climatic Change* 2016–

Advisory Group Member, AGU Sharing Science Program 2016–

Editorial Board Member, *Current Climate Change Reports* 2016–

Rutgers University Committees

Marine Social Science and Policy Faculty Search Committee	2017–
Bloustein School of Planning & Public Policy Dean Search Committee	2016–
Graduate Program on Atmospheric Sciences Nominations Committee	2014–
Institute of Earth, Ocean and Atmospheric Sciences Faculty Advisory Committee	2014–2016
Sustainability Committee	2014–
Henry Rutgers Earth, Ocean, and Atmospheric Sciences Professorship Search Committee	2014–2016
Rutgers Climate Institute Internal Advisory Board	2013–
Strategic Planning Committee on “Understanding and Creating a Sustainable World”	2013
Department of Earth & Planetary Sciences Faculty Search Committee	2013–2014
Department of Earth & Planetary Sciences Faculty Search Committee	2011–2012
Rutgers Climate & Society Initiative Internal Advisory Board	2012–2013

Discussion Leader, Department of Energy Integrated Modeling Workshop 2014

AGU *Eos* Editorial Advisory Board 2013–

Co-Convener, DIMACS Workshop on “Geological data fusion: Tackling the statistical challenges of interpreting past environmental change,” Piscataway, NJ 2013

Intergovernmental Panel on Climate Change Fifth Assessment Report
 Contributing Author 2012–2014
 Working Group 1, Chapter 5, “Information from paleoclimate archives”
 Working Group 2, Chapter 10, “Key economic sectors and services”
 Working Group 2, Chapter 19, “Emergent risks and key vulnerabilities”
 Expert Reviewer, Working Group 1 and Working Group 2 2011–2013

Department of Energy Adviser to U.S. Delegation to 31st Plenary	2009
Organizer, Rutgers Energy Institute Energy Policy Seminar Series	2012-
Session Co-Chair, “Geomicrobiology and the magnetic signature of biogenic iron minerals” Ninth Santa Fe Conference on Rock Magnetism, Santa Fe, NM	2012
AAAS Science & Technology Policy Fellowship Application Reader	2011-2015
Co-Organizer, DOE/EPA Workshops on “Improving the Assessment and Valuation of Climate Change Impacts for Policy and Regulatory Analysis,” Washington, DC	2010-2011
Session Convener, “Incorporating Climate Change Impacts into Policy Analysis” American Geophysical Union Fall Meeting, San Francisco, CA	2010
Organizer, Princeton Environmental Institute Energy Group Seminar Series	2008-2009
Organizer, Princeton University Environmental Geology and Geochemistry Seminar Series	2008
Session Convener, “Biogeomagnetism: Processes and Products” American Geophysical Union Fall Meeting, San Francisco, CA	2005
Secretary, Graduate Student Council, California Institute of Technology, Pasadena, CA	2005-2006
Committee Member, Caltech Y Social Activism Speakers Series, Pasadena, CA	2004-2006

Journal Referee: *AMBIO; Climate of the Past; Climate Research; Climatic Change; Earth and Planetary Science Letters; Earth System Dynamics; Earth’s Future; Ecological Economics; Energy Policy; Environmental Microbiology; Environmental Research Letters; European Biophysics Journal; Geobiology; Geochemistry, Geophysics, Geosystems (G3); Geology; Geophysical Journal International; Geophysical Research Letters; Geoscientific Model Development; Global Environmental Change; Global and Planetary Change; Journal of Applied Physics; Journal of Climate; Journal of Geophysical Research: Biogeosciences; Journal of Geophysical Research: Oceans; Journal of Marine Science and Engineering; Journal of the Royal Society: Interface; Natural Hazards; Nature; Nature Climate Change; Nature Communications; Nature Geoscience; Ocean Science; Palaeogeography, Palaeoclimatology, Palaeoecology (Paleo3); Paleocyanography; PLOS One; Proceedings of the National Academy of Sciences; Progress in Physical Geography; Quaternary Science Reviews; Reviews of Geophysics; Science; Science Advances; Science of the Total Environment; Weather, Climate and Society*

Grant Referee: NASA Postdoctoral Program; National Science Foundation (Antarctic Glaciology; Antarctic Integrated System Science; Decision, Risk, and Management Sciences; Geophysics; Marine Geology and Geophysics; Paleoclimate; Paleo Perspectives on Climate Change); Mississippi-Alabama Sea Grant Consortium; Netherlands Organization for Scientific Research (NWO); Sigma Delta Epsilon/Graduate Women in Science; South African National Research Foundation; Swiss National Science Foundation; U.K. Natural Environment Research Council; U.S. Department of Energy

Member: American Association for the Advancement of Science, American Geophysical Union, Geological Society of America, Society for Risk Analysis

Honors and Awards

American Geophysical Union (AGU) Fellow	2017
American Geophysical Union (AGU) James B. Macelwane Medal and Fellow	2017
Rutgers–New Brunswick Chancellor’s Scholar	2015-
Leopold Leadership Fellow	2015–2016
International Union for Quaternary Research (INQUA) Sir Nicholas Shackleton Medal	2015
AGU Editor’s Citation for Excellence in Refereeing, <i>Earth’s Future</i>	2014
William Mitchell College of Law Expert Witness Training Academy	2014

American Geophysical Union (AGU) William Gilbert Medal	2012
Kavli Fellow	2012
AGU Editor's Citation for Excellence in Refereeing, <i>Geophysical Research Letters</i>	2011
Award for Special Service, U.S. Department of Energy	2010
AAAS Science & Technology Policy Fellow	2009-2011
White House Fellows Program Regional Semi-Finalist	2009
Harrison Brown Memorial Moore Graduate Research Fellow, California Institute of Technology	2002-2006
National Science Foundation Graduate Research Fellow	2002-2005
Prize for Excellence, Sigma Xi (University of Chicago chapter)	2002
Student Marshal, University of Chicago Class of 2002	2001-2002
Junior Phi Beta Kappa	2001

Publications

Working papers and manuscripts in review

1. Desmet, K., R. E. Kopp, D. Nagy, M. Oppenheimer, and E. Rossi-Hansberg (in review). Evaluating the economic cost of coastal flooding.
2. Shwom, R. L. and R. E. Kopp (in review). Long-term risk governance: When do societies act before crisis? *Journal of Risk Research*.
3. Baker, R., T. Carleton, A. D'Agostino, T. Foreman, M. Greenstone, S. Hsiang, A. Hultgren, A. Jina, R. Kopp, M. Pecenco, J. Rising, A. Rode, and J. Yuan (2017). Human Productivity in a Warmer World: The Impact of Climate Change on the Global Workforce. In: *American Economics Association*.
4. Carleton, T., M. Greenstone, S. Hsiang, A. Jina, R. Kopp, I. Nath, J. Rising, A. Rode, S. Seo, A. Viaene, J. Yuan, and A. Zhang (2017). A Full Measure of WTP for Climate Change: Evidence from Mortality. In: *American Economics Association*.
5. Rasmussen, D., K. Bittermann, M. K. Buchanan, S. Kulp, B. H. Strauss, R. E. Kopp, and M. Oppenheimer (2017). Coastal flood implications of 1.5°C, 2.0°C, and 2.5°C temperature stabilization targets in the 21st and 22nd century. *ArXiv e-prints*. eprint: 1710.08297.

Journal articles

1. Kopp, R. E. and M. Humayun (2003). Kinetic model of carbonate dissolution in Martian meteorite ALH84001. *Geochimica et Cosmochimica Acta* **67**(17), 3247–3256. doi: 10.1016/S0016-7037(02)01114-6.
2. Weiss, B. P., S. S. Kim, J. L. Kirschvink, R. E. Kopp, M. Sankaran, A. Kobayashi, and A. Komeili (2004). Magnetic tests for magnetosome chains in Martian meteorite ALH84001. *Proceedings of the National Academy of Sciences* **101**(22), 8281–8284. doi: 10.1073/pnas.0402292101.
3. Weiss, B. P., S. S. Kim, J. L. Kirschvink, R. E. Kopp, M. Sankaran, A. Kobayashi, and A. Komeili (2004). Ferromagnetic resonance and low temperature magnetic tests for biogenic magnetite. *Earth and Planetary Science Letters* **224**, 73–89. doi: 10.1016/j.epsl.2004.04.024.
4. Kopp, R. E., J. L. Kirschvink, I. A. Hilburn, and C. Z. Nash (2005). The Paleoproterozoic snowball Earth: A climate disaster triggered by the evolution of oxygenic photosynthesis. *Proceedings of the National Academy of Sciences* **102**(32), 11131–11136. doi: 10.1073/pnas.0504878102.
5. Kobayashi, A., J. L. Kirschvink, C. Z. Nash, R. E. Kopp, D. A. Sauer, L. E. Bertani, W. F. Voorhout, and T. Taguchi (2006). Experimental observation of magnetosome chain collapse in magnetotactic bacteria: sedimentological, paleomagnetic, and evolutionary implications. *Earth And Planetary Science Letters* **245**, 538–550. doi: 10.1016/j.epsl.2006.03.041.
6. Kopp, R. E., C. Z. Nash, A. Kobayashi, B. P. Weiss, D. A. Bazylinski, and J. L. Kirschvink (2006). Ferromagnetic resonance spectroscopy for assessment of magnetic anisotropy and magnetostatic interactions: A case study of mutant magnetotactic bacteria. *Journal of Geophysical Research* **111**, B12S25. doi: 10.1029/2006JB004529.
7. Kopp, R. E., B. P. Weiss, A. C. Maloof, H. Vali, C. Z. Nash, and J. L. Kirschvink (2006). Chains, clumps, and strings: Magnetofossil taphonomy with ferromagnetic resonance spectroscopy. *Earth and Planetary Science Letters* **247**(1–2), 10–25. doi: 10.1016/j.epsl.2006.05.001.

8. Liang, M.-C., H. Hartman, R. E. Kopp, J. L. Kirschvink, and Y. L. Yung (2006). Production of hydrogen peroxide in the atmosphere of a Snowball Earth and the origin of oxygenic photosynthesis. *Proceedings of the National Academy of Sciences* **103**(50), 18896–18899. doi: 10.1073/pnas.0608839103.
9. Suzuki, Y., R. E. Kopp, T. Kogure, A. Suga, K. Takai, S. Tsuchida, N. Ozaki, K. Endo, J. Hashimoto, and Y. Kato (2006). Sclerite formation in the hydrothermal-vent “scaly-foot” gastropod—possible control of iron sulfide biomineralization by the animal. *Earth and Planetary Science Letters* **242**(1), 39–50. doi: 10.1016/j.epsl.2005.11.029.
10. Kopp, R. E., T. D. Raub, D. Schumann, H. Vali, A. V. Smirnov, and J. L. Kirschvink (2007). Magnetofossil spike during the Paleocene-Eocene thermal maximum: Ferromagnetic resonance, rock magnetic, and electron microscopy evidence from Ancora, New Jersey, United States. *Paleoceanography* **22**, PA4103. doi: doi:10.1029/2007PA001473.
11. Maloof, A. C., R. E. Kopp, J. P. Grotzinger, D. A. Fike, T. Bosak, H. Vali, P. M. Poussart, B. P. Weiss, and J. L. Kirschvink (2007). Sedimentary iron cycling and the origin and preservation of magnetization in platform carbonate muds, Andros Island, Bahamas. *Earth and Planetary Science Letters* **259**(3–4), 581–598. doi: 10.1016/j.epsl.2007.05.021.
12. Kirschvink, J. L. and R. E. Kopp (2008). Palaeoproterozoic ice houses and the evolution of oxygen-mediating enzymes: the case for a late origin of photosystem II. *Philosophical Transactions of the Royal Society B: Biological Sciences* **363**(1504), 2755–2765. doi: 10.1098/rstb.2008.0024.
13. Kirschvink, J. L., R. E. Kopp, T. D. Raub, C. T. Baumgartner, and J. W. Holt (2008). Rapid, precise, and high-sensitivity acquisition of paleomagnetic and rock-magnetic data: Development of a low-noise automatic sample changing system for superconducting rock magnetometers. *Geochemistry Geophysics Geosystems* **9**(5), Q05Y01. doi: 10.1029/2007GC001856.
14. Kopp, R. E. and J. L. Kirschvink (2008). The identification and biogeochemical interpretation of fossil magnetotactic bacteria. *Earth-Science Reviews* **86**(1–4), 42–61. doi: 10.1016/j.earscirev.2007.08.001.
15. Schumann, D., T. D. Raub, R. E. Kopp, J.-L. Guerquin-Kern, T.-D. Wu, I. Rouiller, A. V. Smirnov, S. K. Sears, U. Lücken, S. M. Tikoo, R. Hesse, J. L. Kirschvink, and H. Vali (2008). Gigantism in unique biogenic magnetite at the Paleocene–Eocene Thermal Maximum. *Proceedings of the National Academy of Sciences* **105**(46), 17648–17653. doi: doi:10.1073/pnas.0803634105.
16. Kopp, R., D. Schumann, T. Raub, D. Powars, L. Godfrey, N. Swanson-Hysell, A. Maloof, and H. Vali (2009). An Appalachian Amazon? Magnetofossil evidence for the development of a tropical river-like system in the mid-Atlantic United States during the Paleocene-Eocene thermal maximum. *Paleoceanography* **24**(4), PA4211. doi: 10.1029/2009PA001783.
17. Kopp, R. E., F. J. Simons, J. X. Mitrovica, A. C. Maloof, and M. Oppenheimer (2009). Probabilistic assessment of sea level during the last interglacial stage. *Nature* **462**(7275), 863–867. doi: 10.1038/nature08686.
18. Morrow, D. R., R. E. Kopp, and M. Oppenheimer (2009). Toward ethical norms and institutions for climate engineering research. *Environmental Research Letters* **4**, 045106. doi: 10.1088/1748-9326/4/4/045106.
19. Kopp, R. E. and D. L. Mauzerall (2010). Assessing the climatic benefits of black carbon mitigation. *Proceedings of the National Academy of Sciences* **107**(26), 11703–11708. doi: 10.1073/pnas.0909605107.
20. Kopp, R. E., J. X. Mitrovica, S. M. Griffies, J. Yin, C. C. Hay, and R. J. Stouffer (2010). The impact of Greenland melt on local sea levels: a partially coupled analysis of dynamic and static equilibrium effects in idealized water-hosing experiments. *Climatic Change* **103**, 619–625. doi: 10.1007/s10584-010-9935-1.
21. Katsman, C., A. Sterl, J. Beersma, H. van den Brink, J. Church, W. Hazeleger, R. Kopp, D. Kroon, J. Kwadijk, R. Lammersen, J. Lowe, M. Oppenheimer, H. Plag, J. Ridley, H. von Storch, D. Vaughan, P. Vellinga, L. Vermeersen, R. van de Wal, and R. Weisse (2011). Exploring high-end scenarios for local sea level rise to develop flood protection strategies for a low-lying delta—the Netherlands as an example. *Climatic Change* **109**(3), 617–645. doi: 10.1007/s10584-011-0037-5.
22. Kousky, C., R. E. Kopp, and R. M. Cooke (2011). Risk premia and the social cost of carbon: A review. *Economics* **5**, 2011–21. doi: 10.5018/economics-ejournal.ja.2011-21.
23. Eom, J., K. Calvin, L. Clarke, J. Edmonds, S. Kim, R. Kopp, P. Kyle, P. Luckow, R. Moss, P. Patel, and M. Wise (2012). Exploring the future role of Asia utilizing a Scenario Matrix Architecture and Shared Socio-economic Pathways. *Energy Economics* **34**, S325–S338. doi: 10.1016/j.eneco.2012.03.012.

24. Kopp, R. E. (2012). Palaeoclimate: Tahitian record suggests Antarctic collapse. *Nature* **483**(7391), 549–550. doi: 10.1038/483549a.
25. Kopp, R. E., A. Golub, N. O. Keohane, and C. Onda (2012). The Influence of the Specification of Climate Change Damages on the Social Cost of Carbon. *Economics* **6**, 2012–13. doi: 10.5018/economics-ejournal.ja.2012-13.
26. Kopp, R. E. and B. K. Mignone (2012). The U.S. Government's Social Cost of Carbon Estimates after Their First Two Years: Pathways for Improvement. *Economics* **6**, 2012–15. doi: 10.5018/economics-ejournal.ja.2012-15.
27. Hay, C. C., E. Morrow, R. E. Kopp, and J. X. Mitrovica (2013). Estimating the sources of global sea level rise with data assimilation techniques. *Proceedings of the National Academy of Sciences* **110**, 3692–3699. doi: 10.1073/pnas.1117683109.
28. Kodama, K., R. Moeller, D. Bazylinski, R. Kopp, and A. Chen (2013). The mineral magnetic record of magnetofossils in recent lake sediments of Lake Ely, PA. *Global and Planetary Change* **110C**, 350–363. doi: 10.1016/j.gloplacha.2013.03.012.
29. Kopp, R. E. (2013). Does the mid-Atlantic United States sea level acceleration hot spot reflect ocean dynamic variability? *Geophysical Research Letters* **40**, 3981–3985. doi: 10.1002/grl.50781.
30. Kopp, R. E. and B. K. Mignone (2013). Circumspection, reciprocity, and optimal carbon prices. *Climatic Change* **120**(4), 831–843. doi: 10.1007/s10584-013-0858-5.
31. Kopp, R. E., F. J. Simons, J. X. Mitrovica, A. C. Maloof, and M. Oppenheimer (2013). A probabilistic assessment of sea level variations within the last interglacial stage. *Geophysical Journal International* **193**(2), 711–716. doi: 10.1093/gji/ggt029.
32. Marten, A. L., R. E. Kopp, K. C. Shouse, C. W. Griffiths, E. L. Hodson, E. Kopits, B. K. Mignone, C. Moore, S. C. Newbold, S. Waldhoff, and A. Wolverton (2013). Improving the assessment and valuation of climate change impacts for policy and regulatory analysis. *Climatic Change* **117**, 433–438. doi: 10.1007/s10584-012-0608-0.
33. Miller, K. G., R. E. Kopp, B. P. Horton, J. V. Browning, and A. C. Kemp (2013). A geological perspective on sea-level rise and its impacts along the U.S. mid-Atlantic coast. *Earth's Future* **1**, 3–18. doi: 10.1002/2013EF000135.
34. Siddall, M., R. C. A. Hindmarsh, W. G. Thompson, A. Dutton, R. E. Kopp, and E. J. Stone (2013). Sea level variations during the last interglacial. *PAGES news* **21**(1), 36–37.
35. Chen, A., V. Berounsky, M. Chan, M. Blackford, C. Cady, B. Moskowicz, P. Kraal, E. Lima, R. Kopp, G. Lumpkin, B. Weiss, P. Hesse, and N. Vella (2014). Magnetic properties of uncultivated magnetotactic bacteria and their contribution to a stratified estuary iron cycle. *Nature Communications* **5**, 4797. doi: 10.1038/ncomms5797.
36. Hay, C., J. X. Mitrovica, N. Gomez, J. R. Creveling, J. Austermann, and R. E. Kopp (2014). The sea-level fingerprints of ice-sheet collapse during interglacial periods. *Quaternary Science Reviews* **87**, 60–69. doi: 10.1016/j.quascirev.2013.12.022.
37. Kemp, A. C., C. E. Bernhardt, B. P. Horton, R. E. Kopp, C. H. Vane, W. R. Peltier, A. D. Hawkes, J. P. Donnelly, A. C. Parnell, and N. Cahill (2014). Late Holocene sea- and land-level change on the U.S. southeastern Atlantic coast. *Marine Geology* **357**, 90–100. doi: 10.1016/j.margeo.2014.07.010.
38. Kopp, R. E., R. M. Horton, C. M. Little, J. X. Mitrovica, M. Oppenheimer, D. J. Rasmussen, B. H. Strauss, and C. Tebaldi (2014). Probabilistic 21st and 22nd century sea-level projections at a global network of tide gauge sites. *Earth's Future* **2**, 383–406. doi: 10.1002/2014EF000239.
39. Revesz, R. L., P. H. Howard, K. Arrow, L. H. Goulder, R. E. Kopp, M. A. Livermore, M. Oppenheimer, and T. Sterner (2014). Global warming: Improve economic models of climate change. *Nature* **508**, 173–175. doi: 10.1038/508173a.
40. van de Plassche, O., A. J. Wright, B. P. Horton, S. E. Engelhart, A. C. Kemp, D. Mallinson, and R. E. Kopp (2014). Estimating tectonic uplift of the Cape Fear Arch (southeast-Atlantic coast, USA) using reconstructions of Holocene relative sea level. *Journal of Quaternary Science* **29**(8), 749–759. doi: 10.1002/jqs.2746.
41. Creveling, J. R., J. X. Mitrovica, C. C. Hay, J. Austermann, and R. E. Kopp (2015). Revisiting tectonic corrections applied to Pleistocene sea-level highstands. *Quaternary Science Reviews* **111**, 72–80. doi: 10.1016/j.quascirev.2015.01.003.

42. Engelhart, S. E., M. Vacchi, B. P. Horton, A. R. Nelson, and R. E. Kopp (2015). Sea-level history of the Pacific coast of North America since the Last Glacial Maximum. *Quaternary Science Reviews* **113**, 78–92. doi: 10.1016/j.quascirev.2014.12.001.
43. Hay, C. C., E. D. Morrow, R. E. Kopp, and J. X. Mitrovica (2015). Probabilistic reanalysis of 20th century sea-level rise. *Nature* **517**, 481–484. doi: 10.1038/nature14093.
44. Khan, N. S., E. Ashe, T. A. Shaw, M. Vacchi, J. Walker, W. Peltier, R. E. Kopp, and B. P. Horton (2015). Holocene relative sea-level changes from near-, intermediate-, and far-field locations. *Current Climate Change Reports* **1**, 247–262. doi: 10.1007/s40641-015-0029-z.
45. Kopp, R. E., C. C. Hay, C. M. Little, and J. X. Mitrovica (2015). Geographic variability of sea-level change. *Current Climate Change Reports* **1**, 192–204. doi: 10.1007/s40641-015-0015-5.
46. Kopp, R. E., B. P. Horton, A. C. Kemp, and C. Tebaldi (2015). Past and future sea-level rise along the coast of North Carolina, United States. *Climatic Change* **132**, 693–707. doi: 10.1007/s10584-015-1451-x.
47. Little, C. M., R. M. Horton, R. E. Kopp, M. Oppenheimer, G. A. Vecchi, and G. Villarini (2015). Joint projections of US East Coast sea level and storm surge. *Nature Climate Change* **5**, 1114–1120. doi: 10.1038/nclimate2801.
48. Little, C. M., R. M. Horton, R. E. Kopp, M. Oppenheimer, and S. Yip (2015). Uncertainty in 21st century CMIP5 sea-level projections. *Journal of Climate* **28**, 838–852. doi: 10.1175/JCLI-D-14-00453.1.
49. Mitrovica, J. X., C. C. Hay, E. D. Morrow, R. E. Kopp, M. Dumberry, and S. Stanley (2015). Reconciling past and present changes in Earth rotation with 20th century global sea-level rise: Resolving Munk’s enigma. *Science Advances* **1**, e1500679. doi: 10.1126/sciadv.1500679.
50. Nikitina, D., A. C. Kemp, S. E. Engelhart, B. P. Horton, D. F. Hill, and R. E. Kopp (2015). Sea-level change and subsidence in the Delaware estuary in the last ~ 2200 years. *Estuarine, Coastal and Shelf Science* **164**, 506–519. doi: 10.1016/j.ecss.2015.08.012.
51. Buchanan, M. K., R. E. Kopp, M. Oppenheimer, and C. Tebaldi (2016). Allowances for evolving coastal flood risk under uncertain local sea-level rise. *Climatic Change* **137**, 347–362. doi: 10.1007/s10584-016-1664-7.
52. Dura, T., S. Engelhart, M. Vacchi, B. P. Horton, R. E. Kopp, R. W. Peltier, and S. Bradley (2016). The role of Holocene relative sea-level change in preserving records of subduction zone earthquakes. *Current Climate Change Reports* **2**, 86–100. doi: 10.1007/s40641-016-0041-y.
53. Düsterhus, A., A. Rovere, A. E. Carlson, N. L. M. Barlow, T. Bradwell, A. Dutton, R. Gehrels, F. D. Hibbert, M. P. Hijma, B. P. Horton, V. Klemann, R. E. Kopp, D. Sivan, L. Tarasov, and T. E. Törnqvist (2016). Palaeo sea-level and ice-sheet databases: problems, strategies and perspectives. *Climate of the Past* **12**, 911–921. doi: 10.5194/cp-12-911-2016.
54. Hay, C. C., J. X. Mitrovica, E. Morrow, R. E. Kopp, P. Huybers, and R. B. Alley (2016). Earth rotation changes since -500 CE driven by ice mass variations. *Earth and Planetary Science Letters* **448**, 115–121. doi: 10.1016/j.epsl.2016.05.020.
55. Hayhoe, K. and R. E. Kopp (2016). What surprises lurk within the climate system? *Environmental Research Letters* **11**, 120202. doi: 10.1088/1748-9326/11/12/120202.
56. Kopp, R. E., A. C. Kemp, K. Bitterman, B. P. Horton, J. P. Donnelly, W. R. Gehrels, C. C. Hay, J. X. Mitrovica, E. D. Morrow, and S. Rahmstorf (2016). Temperature-driven global sea-level variability in the Common Era. *Proceedings of the National Academy of Sciences* **113**, E1434–E1441. doi: 10.1073/pnas.1517056113.
57. Kopp, R. E., R. Shwom, G. Wagner, and J. Yuan (2016). Tipping elements and climate-economic shocks: Pathways for integrated assessment. *Earth’s Future* **4**, 346–372. doi: 10.1002/2016EF000362.
58. Lin, N., B. P. Horton, R. E. Kopp, and J. P. Donnelly (2016). Hurricane Sandy’s flood frequency increasing from year 1800 to 2100. *Proceedings of the National Academy of Sciences* **113**, 12071–12075. doi: 10.1073/pnas.1604386113.
59. Liu, J., G. A. Milne, R. E. Kopp, P. U. Clark, and I. Shennan (2016). Sea-level constraints on the amplitude and source distribution of Meltwater Pulse 1A. *Nature Geoscience* **9**, 130–134. doi: 10.1038/ngeo2616.
60. Rasmussen, D. J., M. Meinshausen, and R. E. Kopp (2016). Probability-weighted ensembles of U.S. county-level climate projections for climate risk analysis. *Journal of Applied Meteorology and Climatology* **55**, 2301–2322. doi: 10.1175/JAMC-D-15-0302.1.

61. Bittermann, K., S. Rahmstorf, R. E. Kopp, and A. C. Kemp (2017). Global mean sea-level rise in a world agreed upon in Paris. *Environmental Research Letters* **12**, 124010. doi: 10.1088/1748-9326/aa9def.
62. Buchanan, M. K., M. Oppenheimer, and R. E. Kopp (2017). Amplification of flood frequencies with local sea level rise and emerging flood regimes. *Environmental Research Letters* **12**, 064009. doi: 10.1088/1748-9326/aa6cb3.
63. Garner, A. J., M. E. Mann, K. A. Emanuel, R. E. Kopp, N. Ling, R. B. Alley, B. P. Horton, R. M. DeConto, J. P. Donnelly, and D. Pollard (2017). Impact of climate change on New York City's coastal flood hazard: Increasing flood heights from the preindustrial to 2300 CE. *Proceedings of the National Academy of Sciences* **114**, 11861–11866. doi: 10.1073/pnas.1703568114.
64. Hay, C. C., E. D. Morrow, R. E. Kopp, and J. X. Mitrovica (2017). On the robustness of Bayesian fingerprinting estimates of global sea-level change. *Journal of Climate* **30**, 3025–3038. doi: 10.1175/JCLI-D-16-0271.1.
65. Hsiang, S., R. Kopp, A. Jina, J. Rising, M. Delgado, S. Mohan, D. J. Rasmussen, R. Muir-Wood, P. Wilson, M. Oppenheimer, K. Larsen, and T. Houser (2017). Estimating economic damage from climate change in the United States. *Science* **356**(6345), 1362–1369. doi: 10.1126/science.aal4369.
66. Khan, N. S., E. Ashe, B. P. Horton, A. L. Dutton, R. E. Kopp, G. Brocard, S. E. Engelhart, D. F. Hill, W. Peltier, C. H. Vane, and F. N. Scatena (2017). Drivers of Holocene sea-level change in the Caribbean. *Quaternary Science Reviews* **155**, 13–36. doi: 10.1016/j.quascirev.2016.08.032.
67. Kopp, R. E., R. M. DeConto, D. A. Bader, R. M. Horton, C. C. Hay, S. Kulp, M. Oppenheimer, D. Pollard, and B. H. Strauss (2017). Evolving understanding of Antarctic ice-sheet physics and ambiguity in probabilistic sea-level projections. *Earth's Future* **5**, 1217–1233. doi: 10.1002/2017EF000663.
68. Kopp, R. E., A. L. Dutton, and A. E. Carlson (2017). Centennial- to millennial-scale sea-level change during the Holocene and Last Interglacial periods. *Past Global Changes Magazine* **25**(3), 148–149. doi: 10.22498/pages.25.3.148.
69. Meltzner, A. J., A. D. Switzer, B. P. Horton, E. Ashe, Q. Qiu, D. F. Hill, S. L. Bradley, R. E. Kopp, E. M. Hill, J. M. Majeski, D. H. Natawidjaja, and B. W. Suwargadi (2017). Half-metre sea-level fluctuations on centennial timescales from mid-Holocene corals of Southeast Asia. *Nature Communications* **8**, 14387. doi: 10.1038/ncomms14387.
70. Miller, K. G., R. Baluyot, J. D. Wright, R. E. Kopp, and J. V. Browning (2017). Closing an early Miocene astronomical gap with Southern Ocean $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ records: Implications for sea-level change. *Paleoceanography* **32**, 600–621. doi: 10.1002/2016PA003074.
71. Miller, K. G., J. V. Browning, P. J. Sugarman, D. H. Monteverde, D. C. Andreasen, C. Lombardi, J. Thornburg, Y. Fan, and R. E. Kopp (2017). Lower to mid-Cretaceous Sequence Stratigraphy and Characterization of CO_2 Storage Potential in the Mid-Atlantic U.S. Coastal Plain. *Journal of Sedimentary Research* **87**, 609–629. doi: 10.2110/jsr.2017.33.
72. Mitrovica, J. X., C. C. Hay, R. E. Kopp, C. Harig, and K. Latychev (2017). Quantifying the Sensitivity of Sea Level Change in Coastal Localities to the Geometry of Polar Ice Mass Flux. *Journal of Climate*. doi: 10.1175/JCLI-D-17-0465.1.
73. O'Neill, B. C., M. Oppenheimer, R. Warren, S. Hallegatte, R. E. Kopp, H. O. Pörtner, R. Scholes, J. Birkmann, W. Foden, R. Licker, K. J. Mach, P. Marbaix, M. Mastrandrea, J. Price, K. Takahashi, J.-P. van Ypersele, and G. Yohe (2017). IPCC Reasons for Concern regarding climate change risks. *Nature Climate Change* **7**, 28–37. doi: 10.1038/nclimate3179.
74. Johnson, C. S., K. G. Miller, J. V. Browning, R. E. Kopp, N. S. Khan, Y. Fan, S. D. Stanford, and B. P. Horton (2018). The Role of Sediment Compaction and Groundwater Withdrawal in Local Sea-Level Rise, Sandy Hook, New Jersey, USA. *Quaternary Science Reviews* **181**, 30–42. doi: 10.1016/j.quascirev.2017.11.031.
75. Ross, M. E., A. M. Vicedo-Cabrera, R. E. Kopp, L. Song, D. S. Goldfarb, J. Pulido, S. Warner, S. L. Furth, and G. E. Tasian (2018). Assessment of the combination of temperature and relative humidity on kidney stone presentations. *Environmental Research* **162**, 97–105. doi: 10.1016/j.envres.2017.12.020.

Reports and Book Chapters

1. Katsman, C. A., J. A. Church, R. E. Kopp, D. Kroon, M. Oppenheimer, H. P. Plag, S. Rahmstorf, J. Ridley, H. von Storch, and D. G. Vaughan (2008). "High-end projection for local sea level rise along the Dutch coast in 2100 and 2200". In: *Exploring high-end climate change scenarios for flood protection of the*

- Netherlands. Ed. by P. Vellinga, C. Katsman, A. Sterl, and J. J. Beersma. The Netherlands: KNMI/Alterra, pp.15–81.
2. Bice, K. L., A. G. Eil, B. Habib, P. L. Heijmans, R. E. Kopp, J. P. Nogues, F. L. Norcross, M. Sweitzer-Hamilton, A. Whitworth, and D. L. Mauzerall (2009). *Black Carbon: A review and policy recommendations*. Princeton, NJ: Woodrow Wilson School of Policy & International Affairs. <http://goo.gl/UXh6Qe>.
 3. Interagency Working Group on the Social Cost of Carbon, United States Government (2010). “Appendix 15a. Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866”. In: *Final Rule Technical Support Document (TSD): Energy Efficiency Program for Commercial and Industrial Equipment: Small Electric Motors*. U.S. Department of Energy. <http://go.usa.gov/3fH>.
 4. Boesch, D. F., L. Atkinson, W. Boicourt, J. Boon, D. Cahoon, R. Dalrymple, T. Ezer, B. Horton, Z. Johnson, R. Kopp, M. Li, R. Moss, A. Parris, and C. Sommerfield (2013). *Updating Maryland’s Sea-level Rise Projections. Special Report of the Scientific and Technical Working Group to the Maryland Climate Change Commission*. Cambridge, MD: University of Maryland Center for Environmental Science, 19 pp. <http://www.umces.edu/sea-level>.
 5. Eom, J., R. Moss, J. Edmonds, K. Calvin, B. Bond-Lamberty, L. Clarke, J. Dooley, S. H. Kim, R. E. Kopp, P. Kyle, P. Luckow, P. Patel, A. Thomson, M. Wise, and Y. Zhou (2013). “Scenarios of future socio-economics, energy, land use and radiative forcing”. In: *Engineering Response to Global Climate Change: Planning a Research and Development Agenda*. Ed. by R. G. Watts. Second Edition. Boca Raton: CRC Press, pp.81–138.
 6. Kopp, R. E., S. M. Hsiang, and M. Oppenheimer (2013). Empirically calibrating damage functions and considering stochasticity when integrated assessment models are used as decision tools. In: *Impacts World 2013 Conference Proceedings*. Potsdam, Germany: Potsdam Institute for Climate Impact Research, pp.834–843. doi: 10.2312/pik.2013.001.
 7. Masson-Delmotte, V., M. Schulz, A. Abe-Ouchi, J. Beer, A. Ganopolski, J. G. Rouco, E. Jansen, K. Lambeck, J. Luterbacher, T. Naish, T. Osborn, B. Otto-Bliesner, T. Quinn, R. Ramesh, M. Rojas, X. Shao, and A. Timmermann (2013). “Information from Paleoclimate Archives”. In: *Climate Change 2013: the Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Ed. by T. F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. Midgley. Cambridge, UK: Cambridge University Press, pp.383–464.
 8. Morrow, D. R., R. E. Kopp, and M. Oppenheimer (2013). “Political legitimacy in decisions about experiments in solar radiation management”. In: *Climate Change Geoengineering: Philosophical Perspectives, Legal Issues, and Governance Frameworks*. Ed. by W. C. G. Burns and A. Strauss. Cambridge, UK: Cambridge University Press, pp.146–167.
 9. Arent, D., R. Tol, E. Faust, J. P. Hella, S. Kumar, K. M. Strzepek, F. L. Tóth, and D. Yan (2014). “Key Economic Sectors and Services”. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Ed. by C. B. Field, V. R. Barros, D. Dokken, K. Mach, M. Mastrandrea, T. Bilir, M. Chatterjee, K. Ebi, Y. Estrada, R. Genova, B. Girma, E. Kissel, A. Levy, S. MacCracken, P. Mastrandrea, and L. White. Cambridge, UK: Cambridge University Press, pp.659–708.
 10. Houser, T., R. Kopp, S. Hsiang, R. Muir-Wood, K. Larsen, M. Delgado, A. Jina, P. Wilson, S. Mohan, D. J. Rasmussen, M. Mastrandrea, and J. Rising (2014). *American Climate Prospectus: Economic Risks in the United States*. New York: Rhodium Group, 197 pp. <http://www.climateprospectus.org/>.
 11. Oppenheimer, M., M. Campos, R. Warren, J. Birkmann, G. Luber, B. O’Neill, and K. Takahashi (2014). “Emergent Risks and Key Vulnerabilities”. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Ed. by C. B. Field, V. R. Barros, D. Dokken, K. Mach, M. Mastrandrea, T. Bilir, M. Chatterjee, K. Ebi, Y. Estrada, R. Genova, B. Girma, E. Kissel, A. Levy, S. MacCracken, P. Mastrandrea, and L. White. Cambridge, UK: Cambridge University Press, pp.1039–1099.
 12. Warren, R., N. Arnell, S. Brown, T. Kjellstrom, R. Kopp, R. Nicholls, and J. Price (2014). *Post-IPCC assessment of climate impacts using existing scenarios — advances in understanding*. Report 1. AVOID 2 WPB.1a. http://avoid-net-uk.cc.ic.ac.uk/downloads/avoid2/AVOID2-WP.B.1a_report.v1_final.pdf.
 13. Douglas, E. et al. (2016). *Climate Change and Sea Level Rise Projections for Boston: the Boston Research Advisory Group Report*. Boston, MA: Climate Ready Boston, 54 pp. <http://climateready.boston.gov/findings>.

14. Kopp, R., A. Broccoli, B. Horton, D. Kreeger, R. Leichenko, J. A. Miller, P. Orton, A. Parris, D. Robinson, C. Weaver, M. Campo, M. Kaplan, M. Buchanan, J. Herb, L. Auermuller, and C. Andrews (2016). *Assessing New Jersey's Exposure to Sea-Level Rise and Coastal Storms: Report of the New Jersey Climate Adaptation Alliance Science and Technical Advisory Panel*. New Brunswick, NJ: Rutgers University. doi: 10.7282/T3ZP48CF.
15. National Academies of Sciences, Engineering, and Medicine (2016). *Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update*. Washington, DC: The National Academies Press, 74 pp. doi: 10.17226/21898.
16. Strauss, B. H., R. E. Kopp, W. V. Sweet, and K. Bittermann (2016). *Unnatural Coastal Floods: Sea Level Rise and the Human Fingerprint on U.S. Floods Since 1950*. Climate Central Research Report, 16 pp. <http://goo.gl/n0oqjn>.
17. Griggs, G., J. Árvai, D. Cayan, R. DeConto, J. Fox, H. A. Fricker, R. E. Kopp, C. Tebaldi, and E. A. Whiteman (2017). *Rising seas in California: An update on sea-level rise science*. California Ocean Science Trust, 71 pp.
18. Hayhoe, K., J. Edmonds, R. E. Kopp, A. N. LeGrande, B. M. Sanderson, M. F. Wehner, and D. J. Wuebbles (2017). "Climate models, scenarios, and projections". In: *Climate Science Special Report: Fourth National Climate Assessment, Volume I*. Ed. by D. J. Wuebbles, D. W. Fahey, K. A. Hibbard, D. J. Dokken, B. C. Stewart, and T. K. Maycock. Washington, DC, USA: U.S. Global Change Research Program. Chap. 4, pp. 133–160. doi: 10.7930/J0WH2N54.
19. Kopp, R. E., D. R. Easterling, T. Hall, K. Hayhoe, R. Horton, K. E. Kunkel, and A. N. LeGrande (2017). "Potential surprises – compound extremes and tipping elements". In: *Climate Science Special Report: Fourth National Climate Assessment, Volume I*. Ed. by D. J. Wuebbles, D. W. Fahey, K. A. Hibbard, D. J. Dokken, B. C. Stewart, and T. K. Maycock. Washington, DC, USA: U.S. Global Change Research Program. Chap. 15, pp. 411–429. doi: 10.7930/J0GB227J.
20. National Academies of Sciences, Engineering, and Medicine (2017). *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide*. The National Academies Press, 394 pp. doi: 10.17226/24651.
21. Sweet, W. V., R. Horton, R. E. Kopp, A. N. LeGrande, and A. Romanou (2017). "Sea level rise". In: *Climate Science Special Report: Fourth National Climate Assessment, Volume I*. Ed. by D. J. Wuebbles, D. W. Fahey, K. A. Hibbard, D. J. Dokken, B. C. Stewart, and T. K. Maycock. Washington, DC, USA: U.S. Global Change Research Program. Chap. 12, pp. 333–363. doi: 10.7930/J0VM49F2.
22. Sweet, W. V., R. E. Kopp, C. P. Weaver, J. Obeysekera, R. Horton, E. R. Thieler, and C. Zervas (2017). *Global and Regional Sea Level Rise Scenarios for the United States*. Technical Report NOS CO-OPS 083. National Oceanic and Atmospheric Administration. <https://goo.gl/YUehx6>.
23. Wuebbles, D. J., D. R. Easterling, K. Hayhoe, T. Knutson, R. E. Kopp, J. P. Kossin, K. E. Kunkel, A. N. LeGrande, C. Mears, W. V. Sweet, P. C. Taylor, R. S. Vose, and M. F. Wehner (2017). "Our globally changing climate". In: *Climate Science Special Report: Fourth National Climate Assessment, Volume I*. Ed. by D. J. Wuebbles, D. W. Fahey, K. A. Hibbard, D. J. Dokken, B. C. Stewart, and T. K. Maycock. Washington, DC, USA: U.S. Global Change Research Program. Chap. 1, pp. 35–72. doi: 10.7930/J08S4N35.

Books

1. Houser, T., S. Hsiang, R. Kopp, and K. Larsen (2015). *Economic Risks of Climate Change: An American Prospectus*. New York: Columbia University Press, 376 pp.

Journal Volumes

1. Tol, R., S. Waldhoff, and R. E. Kopp, eds. (2012). *The Social Cost of Carbon*. Economics special issue. <http://www.economics-ejournal.org/special-areas/special-issues/the-social-cost-of-carbon>.
2. Marten, A., K. Shouse, and R. E. Kopp, eds. (2013). *Improving the Assessment and Valuation of Climate Change Impacts for Policy and Regulatory Analysis*. Climatic Change special issue vol. 117, issue 3. <http://link.springer.com/journal/10584/117/3/page/1>.

Theses

1. Kopp, R. E. (2002). "Evidence for Antarctic alteration of Martian meteorite ALH84001". Senior thesis in Geophysical Sciences (M. Humayun, advisor). Chicago, IL: University of Chicago.

2. Kopp, R. E. (2007). "The Identification and Interpretation of Microbial Biogeomagnetism". Ph.D. thesis in Geobiology (J. L. Kirschvink, advisor). Pasadena, CA: California Institute of Technology.

Popular Publications

1. Kopp, R. E. and J. L. Kirschvink (2004). "The world's worst climate disaster". In: *Miracle Planet II: The Evolution of Our World*. [Published in Japanese]. Tokyo: NHK (Japan Broadcasting Corporation).
2. Kirschvink, J. L. and R. E. Kopp (ghostwriter) (2006). Red Earth, White Earth, Green Earth, Black Earth. *Engineering & Science* 4, 10–20.
3. Kopp, R. and B. Strauss (2012). Rising seas a real threat to New Jersey. *Newark Star-Ledger* (July 10). <http://tinyurl.com/ckmmjl9>.
4. Strauss, B. and R. Kopp (2012). Rising seas, vanishing coastlines. *New York Times Sunday Review* (Nov. 25). <http://nyti.ms/TcArGg>.
5. Kopp, R., J. Buzan, and M. Huber (2015). The deadly combination of heat and humidity. *New York Times Sunday Review* (June 7). <http://nyti.ms/1JyXkk7>.
6. Kopp, R. (2016). Managing climate risk in Trump's America. *The Conversation* (November 9). <https://goo.gl/OWovmZ>.
7. Kopp, R. (2016). Trump's energy plan poses climate threat to U.S. economy. *The Conversation* (June 23). <https://goo.gl/nOadXV>.
8. Hayhoe, K. and R. Kopp (2017). AmGeophysicalU-AMA r/Science Ask Me Anything. *The Winnower* 4, e151213.32636. doi: 10.15200/winn.151213.32636.
9. Horton, R., K. Hayhoe, R. Kopp, and S. Doherty (2017). The Climate Risks We Face. *New York Times* (Nov. 6). <https://nyti.ms/2hLb7MS>.
10. Kopp, R. (2017). How bad could Trump's Paris Agreement withdrawal be? A scientist's perspective. *The Conversation* (June 1). <https://goo.gl/EvRo1X>.
11. Kopp, R. (2017). New York 2140: A novelist's vision of a drowned city that still never sleeps. *The Conversation* (March 5). <https://goo.gl/PxVWYK>.

Presentations

Selected Academic Presentations and Abstracts

(Invited talks indicated by an *)

1. * R. E. Kopp, J. L. Kirschvink, D. K. Newman, C. Z. Nash, and I. A. Hilburn (2003). Bacterial Bolsheviks: PS II and the evolution of the oxygenic revolution. American Geophysical Union Fall Meeting, San Francisco, CA, Eos Trans. AGU 84(46), Fall Meet. Suppl., Abstract U52B-07, December 2003.
2. R. E. Kopp, C. Z. Nash, and J. L. Kirschvink (2004). Magnetosome batteries, magnetofossils, and the evolution of the planetary redox state. Southern California Geobiology Symposium, Pasadena, CA, February 2004
3. * R. E. Kopp, B. P. Weiss, S. S. Kim, and J. L. Kirschvink (2004). Ferromagnetic resonance spectroscopy in the hunt for magnetofossils. Institute for Rock Magnetism Santa Fe 6, Santa Fe, NM, June 2004.
4. R. E. Kopp, C. Z. Nash, J. L. Kirschvink, and J. R. Leadbetter (2004). A possible magnetite/maghemite battery in the magnetotactic bacteria. American Geophysical Union Fall Meeting, San Francisco, CA, Eos Trans. AGU 85(47), Fall Meet. Suppl., Abstract GP34A-06, December 2004.
5. R. E. Kopp, J. L. Kirschvink, and B. P. Weiss (2005). Magnetofossils as a novel tracer of ancient microbial communities and environments. Southern California Geobiology Symposium, Los Angeles, CA, April 2005
6. J. L. Kirschvink and R. E. Kopp (2005). A Paleoproterozoic origin of oxygenic photosynthesis as a trigger for the Makganyene Snowball Earth. Earth System Processes 2, Calgary, Alberta, Canada, Paper No. 11-7, August 2005.
7. A. C. Maloof, J. P. Grotzinger, R. E. Kopp, B. P. Weiss, H. Vali, and J. L. Kirschvink (2005). On the origin of magnetization in platform carbonate muds. American Geophysical Union Fall Meeting, San Francisco, CA, Eos Trans. AGU 86(52), Fall Meet. Suppl., Abstract B24A-07, December 2005

8. R. E. Kopp, J. L. Kirschvink, B. P. Weiss, and A. C. Maloof (2005). Identification of magnetosome chains by ferromagnetic resonance spectroscopy. American Geophysical Union Fall Meeting, San Francisco, CA, Eos Trans. AGU 86(52), Fall Meet. Suppl., Abstract B24A-03, December 2005.
9. R. E. Kopp, B. P. Weiss, J. L. Kirschvink, C. Z. Nash, and A. C. Maloof (2006). Fossil magnetotactic bacteria: an iron biosignature. Astrobiology Science Conference, Washington, DC, Astrobiology 6(1), Abstract 20, March 2006.
10. * R. E. Kopp, C. Z. Nash, B. P. Weiss, A. C. Maloof, A. Kobayashi, H. Vali, and J. L. Kirschvink (2006). Identifying magnetotactic bacteria and their fossils with ferromagnetic resonance. Southern California Geobiology Symposium, Riverside, CA, April 2006.
11. * R. E. Kopp, C. Z. Nash, B. P. Weiss, A. C. Maloof, A. Kobayashi, H. Vali, and J. L. Kirschvink (2006). Identifying magnetotactic bacteria and their fossils with ferromagnetic resonance. Goldschmidt Conference, Melbourne, Australia, Abstract No. 206.00, August 2006.
12. * R. E. Kopp (2006). Developing tools for unlocking Earth history from a magnetotactic bacterium?s perspective. University of Johannesburg Geology department seminar, Johannesburg, South Africa, September 2006.
13. A. C. Maloof, R. E. Kopp, J. P. Grotzinger, B. P. Weiss, H. Vali, and J. L. Kirschvink (2006). The origin and preservation of magnetization in platform carbonate muds, Andros Island, Bahamas. Geological Society of America Annual Meeting, Philadelphia, PA, Paper No. 164-7, October 2006
14. * R. E. Kopp, A. C. Maloof, B. P. Weiss, and J. L. Kirschvink (2006). Assessing the source of magnetization in sediments with rock magnetism and ferromagnetic resonance spectroscopy. Geological Society of America Annual Meeting, Philadelphia, PA, Paper No. 164-6, October 2006.
15. R. E. Kopp, T. D. Raub, D. Schumann, H. Vali, A. V. Smirnov, and J. L. Kirschvink (2007). Magnetofossil spike during the Paleocene-Eocene Thermal Maximum: Ferromagnetic resonance, rock magnetic, and electron microscopy evidence from the Atlantic Coastal Plain of New Jersey. Geological Society of America Annual Meeting, Denver, CO, Paper 183-11, October 2007.
16. R. E. Kopp and J. L. Kirschvink (2007). A scoring scheme for evaluating magnetofossil identifications. American Geophysical Union Fall Meeting, San Francisco, CA, December 2007.
17. D. Schumann, T. D. Raub, R. E. Kopp, S. M. Tikoo, S. K. Sears, U. Leucken, I. Rouiller, A. V. Smirnov, J. L. Kirschvink, and H. Vali (2007). Possible Eukaryotic Magnetite in the Paleocene-Eocene Boundary Clay, Ancora, New Jersey. American Geophysical Union Fall Meeting, San Francisco, CA, December 2007.
18. S. M. Tikoo, R. E. Kopp, A. V. Smirnov, T. D. Raub, D. Schumann, H. Vali, and J. L. Kirschvink (2007). Testing the Paleocene-Eocene Thermal Maximum Magnetofossil Spike Hypothesis. American Geophysical Union Fall Meeting, San Francisco, CA, December 2007.
19. * R. E. Kopp (2008). Tracing biological magnetism in sediments: from modern bacteria to ancient global warming. Rutgers University Earth & Planetary Sciences department seminar, New Brunswick, NJ, February 2008.
20. * R. E. Kopp (2008). Tracing biological magnetism in sediments: from modern bacteria to ancient global warming. MIT Chemical Oceanography and Biogeochemistry seminar, Cambridge, MA, February 2008.
21. * R. E. Kopp (2008). A magnetic mystery: the transformation of the iron cycle under severe global warming in the initial Eocene. Lafayette College Geology department seminar, Easton, PA, February 2008.
22. R. E. Kopp and J. L. Kirschvink (2008). The identification of magnetofossils, from the Neogene to the Precambrian. Workshop on Magnetotactic Bacteria, Balatonfured, Hungary, July 2008.
23. R. E. Kopp, D. Schumann, T. D. Raub, J. L. Kirschvink, and H. Vali (2008). A magnetofossil lagersttte: the North American Atlantic Coastal Plain during severe global warming in the initial Eocene. Workshop on Magnetotactic Bacteria, Balatonfured, Hungary, July 2008.
24. * R. E. Kopp, D. Schumann, T. D. Raub, J. L. Kirschvink, and H. Vali (2008). Magnetic microbes and the transformation of the iron cycle under severe global warming in the initial Eocene. Twelfth International Symposium on Microbial Ecology, Cairns, Australia. August 2008.

25. R. E. Kopp, F. J. Simons, A. C. Maloof, and M. Oppenheimer (2008). Local and global sea level during the Last Interglacial: A Gaussian process approach. American Geophysical Union Fall Meeting, San Francisco, CA, December 2008.
26. R. E. Kopp, F. J. Simons, A. C. Maloof, D. Kroon, S. Jung, and M. Oppenheimer (2009). Hazard and Rates of Sea Level Rise: What can we learn from the Last Interglacial? Climate Change: Global Risks, Challenges & Decisions. Copenhagen, Denmark, March 2009.
27. R. E. Kopp, F. J. Simons, Jerry X. Mitrovica, A. C. Maloof, and M. Oppenheimer (2009). Local and global sea level during the Last Interglacial: A probabilistic assessment. AGU Chapman Conference on Abrupt Climate Change, Columbus, OH, June 2009.
28. R. E. Kopp, D. Schumann, T. D. Raub, D. S. Powars, L. V. Godfrey, N. L. Swanson-Hysell, A. C. Maloof, and H. Vali (2009). An Appalachian Amazon? Magnetofossil evidence for the development of a tropical river-like system in the mid-Atlantic U.S. during the Paleocene-Eocene Thermal Maximum. American Geophysical Union Fall Meeting, San Francisco, CA, December 2009.
29. D. S. Powars, L. E. Edwards, R. E. Kopp, J. Self-Trail, and A. Schultz (2009). The PETM in the mid-Atlantic Coastal Plain: A widespread record of unique climate signatures in shallow-shelf Marlboro Clay. American Geophysical Union Fall Meeting, San Francisco, CA, December 2009.
30. T. D. Raub and R. E. Kopp (2009). Global paleogeographic uncertainty at the PETM. American Geophysical Union Fall Meeting, San Francisco, CA, December 2009.
31. * R. E. Kopp (2010). Probabilistic assessment of local and global sea level during the Last Interglacial stage. Harvard ClimaTea seminar, Cambridge, MA, March 2010.
32. * R. E. Kopp (2010). New approaches in domestic and international climate policy. Princeton Environmental Institute Energy Group seminar, Princeton, NJ, April 2010.
33. * R. E. Kopp (2010). Department of Energy Office of Policy & International Affairs and Climate Change Technology Program impacts activities and needs. Energy Modeling Forum Workshop on Climate Change Impacts and Integrated Assessment, Snowmass, CO, July 2010.
34. * R. E. Kopp, F. J. Simons, J. X. Mitrovica, A. C. Maloof and M. Oppenheimer (2010). Last Interglacial Sea Level: A Bayesian approach to integrating geological data and physical models. PALSEA Workshop, Bristol, UK, September 2010.
35. * R. E. Kopp, J. X. Mitrovica, S. M. Griffies, J. Yin, C. C. Hay and R. J. Stouffer (2010). Dynamic and static equilibrium sea level effects of Greenland Ice Sheet melt: An assessment of partially-coupled idealized water hosing experiments. American Geophysical Union Fall Meeting, San Francisco, CA, December 2010.
36. * R. E. Kopp (2011). Incorporating Deep Time and the Long Now into policy and regulatory analysis: Lessons from a social cost of carbon assessment. University of Chicago Department of Geophysical Sciences, Chicago, IL, May 2011.
37. * R. E. Kopp (2011). Macroeconomic rebound, Jevons? paradox, and economic development. Carnegie Mellon University Center for Environmental Decision Making Workshop on "Energy Efficiency and the Rebound Effect," Washington, DC, June 2011.
38. * R. E. Kopp (2011). Searching for the geographic fingerprints of past and future sea level change amid uncertainty. PALSEA Workshop, Cambridge, MA, August 2011.
39. * R. E. Kopp (2011). Searching for the geographic fingerprints of past and future sea level change amid uncertainty. Princeton University Department of Geosciences Solid Earth Brown Bag, Princeton, NJ, October 2011.
40. * R. E. Kopp (2012). Reflections on two years of climate and energy policy in the Obama administration. Princeton Environmental Institute Energy Group seminar, Princeton, NJ, February 2012.
41. * R. E. Kopp (2012). The sea level response to climate change: What can the past tell us about the future? Rutgers Physics Department Colloquium, Piscataway, NJ, February 2012.
42. * R. E. Kopp (2012). The sea level response to climate change: What can the past tell us about the future? Lafayette College Department of Geology and Environmental Geosciences, Easton, PA, February 2012.

43. * R. E. Kopp (2012). Interpreting the noisy geological record of ancient sea level changes. Rutgers Statistics Department Colloquium, Piscataway, NJ, April 2012.
44. J. Liu, N. Gomez, G.A. Milne, J.X. Mitrovica, R. E. Kopp, and P.U. Clark (2012). Re-constraining the source distribution of Meltwater Pulse 1A using near-field and far-field sea-level data. PALSEA Workshop, Madison, WI, June 2012.
45. * R. E. Kopp (2012). Climate change regulation and benefit-cost analysis: Opportunities and challenges. Princeton Science, Technology and Environmental Policy seminar, Princeton, NJ, September 2012.
46. * R. E. Kopp (2012). Interpreting the noisy geological record of ancient sea level changes. American Museum of Natural History Earth & Planetary Sciences Department seminar, New York, NY, September 2012.
47. * R. E. Kopp (2012). Interpreting the noisy geological record of ancient sea level changes. NOAA Geophysical Fluid Dynamics Laboratory seminar, Princeton, NJ, October 2012.
48. * R. E. Kopp (2012). Interpreting the noisy geological record of ancient sea level changes. Caltech Yuk Lunch Seminar, Pasadena, CA, October 2012.
49. * R. E. Kopp (2012). The role of geoengineering among climate solutions. US Kavli Frontiers of Science Symposium, Irvine, CA, November 2012. <http://vimeo.com/58042026>.
50. C. L. Hlavaty, R. E. Kopp, K. G. Miller, J. V. Browning, Y. F. Reinfelder, G. S. Mountain, and B. Slater (2012). Carbon sequestration beneath the New Jersey continental shelf: an assessment of the geological and sociopolitical factors. Geological Society of America Annual Meeting, Charlotte, NC, November 2012.
51. S. Hsiang, R. E. Kopp and M. Oppenheimer, and R. E. Kopp (2012). Modeling the global human impact of climate change: building a pipeline from empirical research to global management. American Geophysical Union Fall Meeting, San Francisco, CA, December 2012.
52. * R. E. Kopp (2012). Balancing benefits and costs in a 4C world: the need for and challenges of natural-social science dialogue. American Geophysical Union Fall Meeting, San Francisco, CA, December 2012.
53. C. M. Little, Y. Liu, M. Oppenheimer, and R. E. Kopp (2012). A probabilistic assessment of the Antarctic contribution to 21st century sea level change on United States coastlines. American Geophysical Union Fall Meeting, San Francisco, CA, December 2012.
54. C. Lombardi, K. G. Miller, J. D. Wright, J. V. Browning, and R. E. Kopp (2012). Lithostratigraphy and clay mineralogy of PETM sediments at new Wilson Lake, NJ, corehole. Geological Society of America Annual Meeting, Charlotte, NC, November 2012.
55. J. D. Wright, M. F. Schaller, K. G. Miller, J. V. Browning, and R. E. Kopp (2012). Layering and high-resolution stable isotope records in the Marlboro Clay: temporal constraints for the onset of the PETM. Geological Society of America Annual Meeting, Charlotte, NC, November 2012.
56. * R. E. Kopp (2012). Climate change risk in benefit-cost analysis: Key sensitivities for the social cost of carbon and optimal emissions trajectories. Society for Risk Analysis Annual Meeting, San Francisco, CA, December 2012.
57. * R. E. Kopp (2013). Interpreting the noisy historical and geological records of sea level change: What can the past tell us about the future? Carnegie Mellon University Climate and Energy Decision Making Seminar, Pittsburgh, PA, January 2013.
58. * R. E. Kopp (2013). Bayesian inference on sea level and ice volume history during past interglacials. DIMACS Workshop on "Geological data fusion: Tackling the statistical challenges of interpreting past environmental change," Piscataway, NJ, January 2013.
59. * R. E. Kopp (2013). Interpreting the noisy geological record of ancient sea level changes: What can the Quaternary tell us about ice sheet stability? CLIVAR WGOMD - SOP Workshop on Sea Level Rise, Ocean/Ice Shelf Interactions and Ice Sheets, Hobart, Australia, February 2013.
60. * R. E. Kopp (2013). Interpreting the noisy geological record of ancient sea level changes: What can the Quaternary tell us about ice sheet stability? Penn State Geosciences Colloquium/Frontiers of Cyberscience Lecture, State College, PA, April 2013.

61. * R. E. Kopp (2013). Interpreting the noisy geological record of ancient sea level changes: What can the Quaternary tell us about ice sheet stability? Lamont-Doherty Biology & Paleo Environment Seminar, Palisades, NY, April 2013.
62. * R. E. Kopp (2013). Interpreting the noisy geological record of ancient sea level changes: What can the Quaternary tell us about ice sheet stability? NASA Goddard Institute for Space Studies Seminar, New York, NY, May 2013.
63. * R. E. Kopp, S. M. Hsiang, and M. Oppenheimer (2013). Empirically calibrating damage functions and considering stochasticity when integrated assessment models are used as decision tools. Impacts World 2013, Potsdam, Germany, May 2013, doi:10.2312/pik.2013.001.
64. * R. E. Kopp (2013). Uncertainties and risks of regional sea-level change: Past, present and future. Energy Modeling Forum Workshop on Climate Change Impacts and Integrated Assessment, Snowmass, CO, July 2013. <https://emf.stanford.edu/ccia-2013-agendas-and-presentations>
65. * R. E. Kopp (2013). Regionalizing sea-level rise projections for urban planning. DIMCS/CCIADA Workshop on Urban Planning for Climate Events, Piscataway, NJ, September 2013. <http://dimacs.rutgers.edu/Workshops/Urban/Slides/SeaLevelTalk.pdf>
66. B. P. Horton, S. E. Engelhart, and R. E. Kopp (2013). Holocene relative sea-level change from near-, intermediate- and far-field locations. PALSEA2 Workshop, Rome, Italy, October 2013.
67. R. E. Kopp, C. C. Hay, E. Morrow, J. X. Mitrovica, and V. Pavlovic (2013). Bayesian estimate of rates and sources of past sea-level change. PALSEA2 Workshop, Rome, Italy, October 2013.
68. J. Liu, G. A. Milne, R. E. Kopp and I. Shennan (2013). Constraining the rate and source distribution of MWP-1A using near- and far-field data and modeling constraints. PALSEA2 Workshop, Rome, Italy, October 2013.
69. * R. E. Kopp (2013). Frontiers in the assessment of climate change damages for benefit-cost analysis. Institute for Policy Integrity Fifth Annual Cost-Benefit Analysis and Issue Advocacy Workshop, New York, NY, October 2013. <https://www.youtube.com/watch?v=SA13Ug3tkvk>
70. * R. E. Kopp (2013). Local and global impacts of climate change and extreme weather. Schwartz Center for Economic Policy Analysis, New School for Social Research, New York, NY, November 2013. <http://youtu.be/R8NXVVP4SWQ>
71. A. P. Chen, V. M. Berounsky, M. K. Chan, B. M. Moskowitz, E. A. Lima, R. E. Kopp, C. Cady, B. P. Weiss and P. Hesse (2013). Magnetofossils as tracers of oxygenation change: a case study from the stratified Pettaquamscutt River Estuary. American Geophysical Union Fall Meeting, San Francisco, CA, December 2013.
72. B. P. Horton, S. E. Engelhart, A. C. Kopp, D. F. Hill and R. E. Kopp (2013). Holocene relative sea-level changes from the U.S. Atlantic coast. American Geophysical Union Fall Meeting, San Francisco, CA, December 2013.
73. A. C. Kemp, R. E. Kopp, B. P. Horton and N. Cahill (2013). Spatial and temporal variability of late Holocene sea-level changes in the North Atlantic. American Geophysical Union Fall Meeting, San Francisco, CA, December 2013.
74. * R. E. Kopp, C. C. Hay and J. X. Mitrovica (2013). Quantifying uncertainty in the level, rates and sources of interglacial sea-level change. American Geophysical Union Fall Meeting, San Francisco, CA, December 2013.
75. * R. E. Kopp, C. C. Hay, E. Morrow, J. X. Mitrovica, B. P. Horton, and A. C. Kemp (2013). Sea-level variability in tide-gauge and geological records: An empirical Bayesian analysis. American Geophysical Union Fall Meeting, San Francisco, CA, December 2013.
76. C. M. Little, M. Oppenheimer, R. M. Horton, J. Yin and R. E. Kopp (2013). Characterizing uncertainty in CMIP5 projections of local sea level change. American Geophysical Union Fall Meeting, San Francisco, CA, December 2013.
77. J. Liu, G. A. Milne, R. E. Kopp and I. Shennan (2013). Constraining the source distribution of MWP-1A using near- and far-field data and modeling constraints. American Geophysical Union Fall Meeting, San Francisco, CA, December 2013.

78. * R. E. Kopp (2014). Uncertainties and risks of regional sea-level change: Past, present and future. Pardee Center for the Longer-Range Future, Boston University, Boston, MA, February 2014. <http://goo.gl/ZTyNFB>
79. * R. E. Kopp (2014). Uncertainties and risks of regional sea-level change: Past, present and future. Department of Earth Sciences, University of New Hampshire, Durham, NH, February 2014.
80. * R. E. Kopp (2014). Probabilistic projections of future sea-level change and their implications for flood risk management. Eastern Coastal Infrastructure and Climate Change: Science, Impacts, Planning, and Response, Crystal City, VA, February 2014.
81. J. X. Mitrovica, J. Austermann, C. Hay, N. Gomez, J. R. Creveling, and R. E. Kopp (2014). The Sea-Level Fingerprints of Ice-Sheet Collapse During Interglacial Periods. European Geophysical Union 2014 General Assembly, Vienna, Austria, April 2014.
82. * R. E. Kopp (2014). A pathway toward characterizing climate risks across space and time: An example of sea-level change and flood risk. Resources for the Future First Wednesday Seminar: Limits to Securitization – the Future of Insurance, Washington, DC, June 2014. <http://goo.gl/jQsqFw>
83. * T. Houser, S. M. Hsiang, and R. E. Kopp (2014). A Discussion of the Independent Risk Assessment for *Risky Business: The Economic Risks of Climate Change in the United States*. Resources for the Future, Washington, DC, June 2014. <http://goo.gl/4lGbOl>
84. * R. E. Kopp (2014). *American Climate Prospectus: Economic Risks in the United States*. Energy Modeling Forum Workshop on Climate Change Impacts and Integrated Assessment, Snowmass, CO, July 2014.
85. * R. E. Kopp (2014). Sea-level rise and extreme events: Insights from the *American Climate Prospectus*. Energy Modeling Forum Workshop on Climate Change Impacts and Integrated Assessment, Snowmass, CO, July 2014. <https://emf.stanford.edu/events/climate-change-impacts-integrated-assessment-xx-cciiia>
86. * R. E. Kopp (2014). Assessing the economic risks of extreme weather in a changing climate. Climate Engineering Conference 2014, Berlin, August 2014. <https://emf.stanford.edu/events/climate-change-impacts-integrated-assessment-xx-cciiia>
87. B. Horton, A. Kemp and R. Kopp (2014). Reconstructing Common Era Sea Level I: Lessons from the U.S. Atlantic Coast. PALSEA2 Workshop, Lochinver, Scotland, September 2014.
88. R. Kopp, A. Kemp, K. Bittermann, J. Donnelly, C. Hay, J. Mitrovica, E. Morrow, S. Rahmstorf, and B. Horton (2014). Reconstructing Common Era Sea Level II: An Integrated Analysis. PALSEA2 Workshop, Lochinver, Scotland, September 2014.
89. * R. E. Kopp (2014). Panelist, Systemic Risk in Global Agriculture Princeton-Columbia Joint Conference. Princeton University, Princeton, NJ, October 2014. <http://risk.princeton.edu/archive.html#agconf>
90. * R. E. Kopp (2014). Panelist, conference on the Economic and Financial Risks of a Changing Climate. Resources for the Future, Washington, DC, November 2014.
91. * R. E. Kopp (2014). The Risk Perspective of the *American Climate Prospectus*. European Commission Joint Research Council Global Risk Conference, Seville, Spain, December 2014. <http://goo.gl/P0A4sQ>
92. * R. E. Kopp (2014). Empirically calibrated damages: Insights from the *American Climate Prospectus*. Princeton Environmental Institute Climate Futures Initiative Integrated Assessment Modeling Workshop, Princeton, NJ, December 2014.
93. * R. Kopp, T. Houser, S. Hsiang, K. Larsen, A. Jina, M. Delgado, R. Muir-Wood, D. J. Rasmussen, J. Rising, M. Mastrandrea, and P. Wilson (2014). Climate risks over space and time: Insights from the *American Climate Prospectus*. Society for Risk Analysis Annual Meeting, Denver, CO, December 2014.
94. * C. C. Hay, E. Morrow, R. Kopp, and J. X. Mitrovica (2014). A Revised Estimate of 20th Century Global Mean Sea Level. American Geophysical Union Fall Meeting, San Francisco, CA, December 2014.
95. * K. Gordon, T. Houser, R. Kopp, S. Hsiang, K. Larsen, A. Jina, M. Delgado, R. Muir-Wood, D. J. Rasmussen, J. Rising, M. Mastrandrea, and P. Wilson (2014). *Risky Business and the American Climate Prospectus: Economic Risks of Climate Change in the United States*. American Geophysical Union Fall Meeting, San Francisco, CA, December 2014.
96. * B. P. Horton, A. C. Kemp, and R. E. Kopp (2014). Common Era Sea-Level Change. American Geophysical Union Fall Meeting, San Francisco, CA, December 2014.

97. * A. Jina, S. Hsiang, R. Kopp, D.J. Rasmussen, and J. Rising (2014). Putting climate impact estimates to work: the empirical approach of the *American Climate Prospectus*. American Geophysical Union Fall Meeting, San Francisco, CA, December 2014.
98. R. E. Kopp, S. Hsiang, T. Houser, K. Larsen, D. J. Rasmussen, A. Jina, J. Rising, M. Delgado, S. Mohan, R. Muir-Wood, and P. Wilson (2014). Managing U.S. climate risk through mitigation: Insights from the *American Climate Prospectus*. American Geophysical Union Fall Meeting, San Francisco, CA, December 2014.
99. * R. E. Kopp, M. Delgado, R. M. Horton, T. Houser, C. M. Little, R. Muir-Wood, M. Oppenheimer, D. J. Rasmussen, R. H. Strauss, C. Tebaldi, and P. Wilson (2014). Probabilistic projections of future sea-level change and their implications for flood risk management: Insights from the *American Climate Prospectus*. American Geophysical Union Fall Meeting, San Francisco, CA, December 2014.
100. * J. X. Mitrovica, C. C. Hay, R. E. Kopp, and E. Morrow (2014). The Sea Level Fingerprints of Global Change. American Geophysical Union Fall Meeting, San Francisco, CA, December 2014.
101. * R. E. Kopp (2015). Uncertainties and risks of regional sea-level change: Past, present and future. University of Connecticut Marine Sciences Seminar, Groton, CT, January 2015.
102. * R. E. Kopp (2015). Uncertainties and risks of regional sea-level change. FEMA Technical Mapping Advisory Council, Subcommittee on Future Conditions. Webinar, April 2015.
103. * R. E. Kopp (2015). Panelist, New Economics of Coastal Climate Change Adaptation. Urban Coast Institute and Center for the Blue Economy, Washington, DC, April 2015.
104. * R. E. Kopp (2015). Panelist, Next American Economy project. Roosevelt Institute, New York, NY, May 2015.
105. * R. E. Kopp (2015). Piecing together sea-level change in the Quaternary and the Anthropocene. International Union for Quaternary Research Congress, Nagoya, Japan, July 2015.
106. * R. E. Kopp (2015). Climate change: current status and future risks. Aspen Institute Program on the World Economy, Aspen, CO, August 2015.
107. * R. E. Kopp (2015). Sea-level rise: Assessing the risks, estimating the costs. Energy Policy Institute at Chicago (EPIC) seminar, University of Chicago, Chicago, IL, September 2015. http://youtu.be/bagRtnY_Xm8
108. * R. E. Kopp (2016). Uncertainties and risks of sea-level change: Past, present and future. Hong Kong University of Science and Technology, Hong Kong, January 2016.
109. * R. E. Kopp, R. Shwom, G. Wagner, J. Yuan (2016). Tipping elements, tipping points, and economic catastrophes: The state of knowledge. Climate Damages and Tipping Points Workshop, Arizona State University, Phoenix, AZ, January 2016.
110. * R. E. Kopp (2016). Treatment of uncertainty in climate change risk assessments. NAS Workshop on Methods for Characterizing Risk in Climate Change Assessments, Washington, DC, March 2016. <http://goo.gl/azyHx3>
111. * R. E. Kopp (2016). Global sea-level change, past and future. Rising Seas & Extreme Events Symposium, University of Delaware, Newark, DE, April 2016.
112. * R. E. Kopp (2016). Economic Risks of Climate Change: *An American Prospectus*, and the path to a global assessment. EPRI ENV-VISION, Washington, DC, May 2016.
113. * R. E. Kopp (2016). Probabilistic sea-level rise projections for the Chesapeake Bay. Remote presentation to Chesapeake Bay Program Climate Resiliency Working Group, May 2016.
114. * R. E. Kopp (2016). Assessing the risks of sea-level rise. Scripps Institution of Oceanography, La Jolla, CA, July 2016.
115. R. Kopp, A. Kemp, B. Horton, C. Little and A. Garner (2016). Regional Common Era sea level in the North Atlantic: In search of missing processes. PALSEA2 Workshop, Mt. Hood, OR, September 2016.
116. * R. E. Kopp (2016). Assessing the risks of sea-level rise. Stanford University Department of Earth System Science, Stanford, CA, October 2016.

117. * R. E. Kopp (2016). Regional sea-level projections: What drives uncertainty where? American Geophysical Union Fall Meeting, San Francisco, CA, December 2016.
118. * R.E. Kopp (2017). Assessing the risks of sea-level rise. U.S. Naval Academy Oceanography Department, Annapolis, MD, January 2017.
119. * R.E. Kopp (2017). Assessing the risks of sea-level rise. ExxonMobil, Clinton, NJ, February 2017.
120. * R.E. Kopp (2017). Assessing the risks of sea-level rise. Rutgers University–Newark Department of Earth & Environmental Sciences, Newark, NJ, March 2017.
121. * R.E. Kopp (2017). Challenges and opportunities for benefit-cost IAMs: Lessons from the National Academies' social cost of carbon project. Workshop on Climate Policy and Integrated Assessment Modelling, Princeton, NJ, March 2017.
122. * R.E. Kopp (2017). Challenges of projecting local sea-level changes. American Physical Society March Meeting, New Orleans, LA, March 2017.
123. * R.E. Kopp (2017). Inspecting the dice: The probabilistic current in sea-level rise projections. International WCRP/IOC Conference: Regional Sea Level Changes and Coastal Impacts, New York, NY, July 2017.
124. * R.E. Kopp (2017). Coastal risks in an age of sea-level change. Montclair State University Sustainability Seminar Series, Montclair, NJ, October 2017.
125. * R.E. Kopp (2017). Sea-level rise and coastal risk. National Academies of Sciences Division of Earth and Life Studies, Washington, DC, October 2017.
126. * R.E. Kopp (2017). Current approaches to assessing risks of sea-level rise. Society for Risk Analysis Annual Meeting, Arlington, VA, December 2017.
127. * R.E. Kopp (2017). The Climate Science Special Report: Rising Seas and Changing Oceans. American Geophysical Union Fall Meeting, New Orleans, LA, December 2017. <https://youtu.be/fDJP5RgKkj4?t=43m37s>
128. * R.E. Kopp (2017). Probabilistic mapping of past and future sea-level change. American Geophysical Union Fall Meeting, New Orleans, LA, December 2017. <https://youtu.be/3BFnCOBtCC4?t=1h1m30s>
129. * R.E. Kopp (2018). Coasts in times of sea-level rise. Yale School of Forestry & Environmental Studies, New Haven, CT, January 2018. <https://youtu.be/GN3vE6pPRzY>

Selected Public Presentations and Media Appearances

1. "Bacterial Bolsheviks? The Paleoproterozoic ice ages and the rise of oxygenic photosynthesis", Environmental Charter High School, Lawndale, CA, April 2005.
2. "Echoes of Ancient Times: Climate Change in Earth's Past and Our Future", Liz Levin & Company Leadership Salon Series, Boston, MA, February 2008.
3. "Echoes of Ancient Times: Climate Change in Earth's Past and Our Future", *Philo 250: Problems of Ethics and Society* course taught by David Morrow at Hunter College, City University of New York, March 2008.
4. "Melting Ice Sheets in Earth's Past and Our Future", Philadelphia Geological Society, Philadelphia, PA, January 2010.
5. Panelist on "Jobs and the Environment," U.S. EPA/Rutgers University conference on "Greening New Jersey Communities from the Ground Up," New Brunswick, NJ, October 2011.
6. "Solar Energy in the Global Energy System: Flows, Needs, Status, and Drivers," Siemens Solar Exchange East 2012, Piscataway, NJ, May 2012.
7. Panelist, Rutgers University Earth Day Film Festival, New Brunswick, NJ, April 2013.
8. Panelist, Putting a Price on Carbon: The Social Cost of carbon and U.S. Climate Policy, Bard Center of Environmental Policy and Pace Law School, White Plains, NY, May 2013.
9. Featured in: Maryland Sea Grant (2013), Forecasting sea level rise for Maryland. July 2013. <http://youtu.be/RCC3C89qxOM>.

10. "Rising Tide: what can the past tell us about future sea-level change?", Rutgers University Geology Museum Open House, New Brunswick, NJ, January 2014.
11. "The economic impact of climate change," *Radio Times with Marty Moss-Coane*, WHYY, July 1, 2014. <http://goo.gl/DfPnc9>.
12. Panelist, Environmental New Jersey and NJPIRG Student Chapter Solar Panel Roundtable, New Brunswick, NJ, December 2014.
13. Panelist, Climate Leadership Conference, Arlington, VA, February 2015.
14. "Sudden heat," *Radio Ecoshock*, June 24, 2015. <https://goo.gl/e3TWX8>.
15. "Economic Risks of Climate change: An American Prospectus," North Jersey Public Policy Network talk, Hackensack, NJ, September 2015.
16. "Food for Tomorrow: Risks of a Changing Climate," *New York Times* Food for Tomorrow Conference, Stone Barns, NY, October 2015. <https://youtu.be/8n6eYsQ4e08>.
17. Panelist, Conference on Sustainable, Responsible, Impact Investing. Colorado Springs, CO, November 2015.
18. Featured in: New Jersey Climate Adaptation Alliance (2015), Climate Change and the Jersey Shore. November 2015. <https://youtu.be/zZn5Xh5FD88>
19. Panelist, NJPIRG New Jersey Solar Summit, New Brunswick, NJ, December 2015.
20. "Climate Change: Economic risks to Maryland", NAIOP Maryland Commercial Real Estate Policy Conference, Towson, MD, December 2015.
21. "New report blames most rising seas on humans — but this scientist remains hopeful," *PRI's The World*, February 23, 2016. <http://goo.gl/RuhXl3>
22. "Rising sea levels," *Radio Times with Marty Moss-Coane*, WHYY, February 29, 2016. <http://goo.gl/zWLU5W>
23. "The Climate Is Changing while Politics Stays the Same," *To The Point*, KCRW, April 4, 2016. <http://goo.gl/KGfk2Z>
24. "Coasts in Times of Sea-Level Rise", Rutgers University Institute of Earth, Ocean & Atmospheric Sciences public lecture, New Brunswick, NJ, Oct. 2016. <https://youtu.be/4pcnk0IXpQ>
25. "Coasts in Times of Sea-Level Rise," HBCU Climate Change Conference, New Orleans, LA, March 2017.
26. Panelist, "Kim Stanley Robinson's *New York 2140*", Rutgers University, New Brunswick, NJ, April 2017. <https://youtu.be/MxpzGg022do>
27. "Probabilities and deep uncertainties in sea-level rise projections," Water Utility Climate Alliance webinar, May 2017.
28. "The Shore in an age of sea-level rise," C-Change Conversations, Princeton, NJ, June 2017.
29. "Frontiers in sea-level rise projections: Local effects, probabilities, and deep uncertainties," Canadian Climate Forum webinar on sea-level rise, June 2017.
30. "Episode 45: Climate Science Part 3 – Paleoclimate," Energy Transition Show, June 14, 2017. <http://xenetwork.org/ets/episodes/episode-45-paleoclimate/>
31. "Do we need to be 'scared straight' on climate change?," *To The Point*, KCRW, July 14, 2017. <https://goo.gl/C3eBZF>
32. "Rising Sea Levels Put Coastal Cities At Risk," *The Real News*, July 20, 2017. <https://goo.gl/CPdo3U>
33. Panelist, "What Markets Can Learn from Modeling Value at Risk from Climate Change", CFA Society of New York conference "Climate Change is a Given – How to Drive Value and Manage Risk," October 2017.
34. "Will the Federal Climate Change Report Alter the Debate?," Knowledge@Wharton, November 10, 2017. <http://knowledge.wharton.upenn.edu/article/new-federal-climate-change-report/>
35. "Blunt assessment from climate scientist Robert Kopp: NJ's coastline could disappear quickly," interview in *Newark Star-Ledger*, November 13, 2017. <https://goo.gl/MCYLNA>

36. “Dr. Robert Kopp on the Latest Climate Report,” Planet Watch Radio, January 8, 2018.
<http://planetwatchradio.com/dr-robert-kopp-latest-climate-report-pw006/>

Grants

1. PI for “Integrated Climate/Economic Modeling for Domestic and International Regulatory Analysis”, Pacific Northwest National Laboratory, 11/1/2011–9/30/2014.
2. PI for “Collaborative Research: P2C2 – Statistical estimation of past ice sheet volumes from paleo-sea level records,” National Science Foundation ARC-1203415, 7/1/2012–6/31/2016.
3. PI for “Development of historically-calibrated sea-level rise projections for risk management along the New Jersey shore,” New Jersey Sea Grant Consortium Project #6410-0012, 2/1/2014–1/31/2017.
4. Co-PI for “Collaborative Research: EaSM-3: Regional decadal predictions of coupled climate-human systems,” National Science Foundation OCE-1419584, 9/1/2014–8/31/2018.
5. Co-PI for “Collaborative Research: Sea-Level Variability in the Common Era,” National Science Foundation OCE-1458904, 4/1/2015–3/31/2018.
6. PI for “Global Climate Prospectus: Physical Projections,” Rhodium Group, 10/15/2015–6/30/2018.
7. PI for “Integrated Assessment of Climate Change, Tipping Points and Economic Catastrophes: A Scoping Analysis”, Environmental Defense Fund, 11/1/2015–12/31/2016.
8. Co-PI for “Communicating about flood risks to real estate market segments in New Jersey”, New Jersey Sea Grant, 2/1/2016–1/31/2018.
9. PI for “NRT: Coastal Climate Risk & Resilience,” National Science Foundation DGE-1633557, 9/1/2016–8/31/2021.
10. Co-PI for “Investigating Changing Flood Risks for the U.S. Atlantic Coast,” Community Foundation of New Jersey, 9/1/2016–8/31/2018
11. PI for “Collaborative Research: P2C2 – Reconstructing rates and sources of sea-level change over the last ~ 150 thousand years from a new coral database,” National Science Foundation OCE-1702587, 6/15/2017–5/31/2019.
12. PI for “Collaborative Research: PREEVENTS Track 2: Thresholds and envelopes of rapid ice-sheet retreat and sea-level rise: reducing uncertainty in coastal flood hazards,” National Science Foundation ICER-1663807, 8/1/2017–7/31/2021.
13. Co-PI for “Sea Level Change Science Team: Improving sea level projection and risk analysis linking physics & observations,” National Aeronautics and Space Administration 80NSSC17K0698, 9/19/2017–4/30/2020.

Students and Postdocs

Primary advisees

1. Erica Ashe, Rutgers University, Ph.D. candidate in Statistics (2013-)
2. Kristen Joyse, Rutgers University, Ph.D. candidate in Geological Sciences (2016-)

Committee member for

1. Ronidell Baluyot, Rutgers University, M.S. '13 in Geological Sciences (2012-2013)
2. Shankar Chandramowli, Rutgers University, Ph.D. '15 in Public Policy (2013-2015)
3. Joseph Majkut, Princeton University, Ph.D. '14 in Atmosphere & Ocean Sciences (2014)
4. Maya Buchanan, Princeton University, Ph.D. candidate in Public Policy (2014-2017)
5. D. J. Rasmussen, Princeton University, Ph.D. candidate in Public Policy (2015-)
6. Jennifer Walker, Rutgers University, Ph.D. candidate in Oceanography (2016-)

External reviewer for

1. Robert Bierkandt, Universität Potsdam, Dr. rer. nat. '16 in Physics

Student projects supervised

1. Sonia Tikoo, California Institute of Technology, B.S. '08 in Geobiology (research project, 2006-2007)
2. Rachel Barr, Princeton University, Ph.D. candidate in Public Policy (independent study, 2012)
3. Corie Hlavaty, Rutgers University, B.S. '13 in Geological Sciences (senior thesis, 2012-2013)
4. Kinan Tadmori, Rutgers University, B.S. '15 in Biological Sciences/Environmental Policy (research project, 2012-2013)
5. Andrew Wang, Rutgers University, B.S. '13 in Mechanical Engineering (research project, 2012-2013)
6. Zeal Shah, Rutgers University, B.S. '15 in Mechanical Engineering (research project, 2013-2014)
7. Emily Zee, Rutgers University, B.S. '16 in Mechanical Engineering (research project, 2013-2014)
8. Rachel DiSciullo, Rutgers University, B.S. '17 in Mechanical Engineering (research project, 2015-2016)
9. Christina Williamson, Pomona University (summer undergraduate research experience, 2016)

Student projects co-advised

1. Jean Liu, University of Toronto, M.S. '13 in Earth Sciences (2012-2013)
2. Eric Morrow, Harvard University, Ph.D. '14 in Earth & Planetary Sciences (2012-2014)
3. Kendra McKoy, Rutgers University, M.S. candidate in Geological Sciences (2012-2015)
4. Cuong Tran, Rutgers University, Ph.D. candidate in Computer Science (2013-2015)
5. Chintan Dalal, Rutgers University, Ph.D. candidate in Computer Science (2013-2016)

Postdoctoral mentees

1. Daniel Gilford, Rutgers University (2018-)
2. Andra Reed, Rutgers University (2016-)
3. Jiacan Yuan, Rutgers University (2015-)
4. Carling Hay, Harvard University (2012-2017)/Rutgers University (2014-2017)
5. Eric Morrow, Rutgers University (2014-2015)