

# Curriculum Vitae

Joan A. Kleypas

May 2015

## Education

- 1992 Ph.D., Tropical Marine Studies, James Cook Univ. of North Queensland, Australia  
1980 M.S., Marine Science, University of South Carolina  
1978 B.S., Oceanography/Marine Biology, Lamar University, TX

## Work History (post-PhD)

- Scientist III, NCAR, 2008–present; Climate & Global Dynamics/Integrated Sci Program, NCAR  
Scientist II, NCAR, 2004–2008; Institute for the Study of Society and Environment, NCAR  
Scientist I, NCAR, 2003–2004; Environmental and Societal Impacts Group, NCAR  
Associate Scientist, NCAR, 1998–2003; US JGOFS Synthesis & Modeling Project  
Visiting Scientist, NCAR, 1996–1998; Climate and Global Dynamics  
Visiting Assistant Professor, Geosciences, Colorado College, 1995–1996  
Postdoctoral Research Scientist, NCAR, 1993–1995; Advanced Study Program

## Scientific Committees and Editing

- 2014–present Member, Selection Committee of the Pew Fellows Program in Marine Conservation  
2014–present Member, Council on the Human Future, Clark University, Mellon Foundation  
Feb 2014 Co-chair, AGU Ocean Sciences Meeting session on *The Coral Triangle of the Indonesian/Philippines Archipelago, its response to Climate change* (with Fred Castruccio, Arnold Gordon, and Elizabeth McLeod)  
Jan 2014 Global Environmental Fund Technical Advisory Panel  
2012 Co-chair and organizer (with Ilana Wainer) of short Course on Ocean Acidification, Cananea, Brazil  
2012 Co-chair and organizer (with Enrique Curchitser) Workshop on Climate Change and Marine Ecosystems (NCAR)  
2012–present Scientific Adviser, NNOCCI (National Network for Ocean and Climate Change Interpretation; an NSF-funded program to improve climate communication through zoos and aquaria)  
2011–2014 Scientific Advisor, COMPASS (Communication Partnership for Science and the Sea)  
2011–2012 Panel Member, National Academy of Sciences *Review of the National Ocean Acidification Research Plan*  
2011 Co-chair, AGU Fall Meeting session on *Ocean Acidification: Past Events, Present Conditions and Future Impacts* (with R. Feely and J.-P. Gattuso)  
2011 Lead Organizer, 1<sup>st</sup> Ocean Acidification Meeting for Principal Investigators, Woods Hole Oceanographic Institution, Funded by NSF and OCB Program  
2009–2011 Member, ORRAP Ocean Acidification Task Force  
2009–2011 Panel Member, National Academy of Sciences *Development of an Integrated Science Strategy for Ocean Acidification Monitoring, Research, and Impacts Assessment*  
2008–2011 Co-chair, Subcommittee on Ocean Acidification, OCB Program  
2007–2012 Member, International Advisory Board, European Project on Ocean Acidification (EPOCA)  
2007–2008 Co-editor, *Climate Research* special issue on Marine Ecosystems and Climate Change  
2006–2008 Editor, *Climate Research*  
2006–2010 Scientific Steering Committee Member, Ocean Carbon and Biogeochemistry (OCB) Program (NSF-NOAA-NASA)

- 2005–2010 Member, International Advisory Panel for the Integrated Project CARBOOCEAN - Marine carbon sources and sinks (<http://www.carboocean.org/>), European Comm.
- 2005–2006 Co-editor, *AGU Monograph* on "Coral Reefs and Global Climate Change"
- 2004 Topic Editor, *Proc. 10<sup>th</sup> Int. Coral Reef Symp.*
- 2003–2004 Member, Carbon Cycle Science Ocean Interim Implementation Group (for US Carbon Cycle Scientific Steering Group and Inter-Agency Working Group)

## Honors and Awards

- USGS Shoemaker Award for Communication Excellence, with Lisa Robbins, Mark Hansen and Stephan Meylan for development of CO2calc App and Software, 2013
- Heinz Foundation Award for the Environment, 2011
- AGU Rachel Carson Lecture Award, 2009
- Aldo Leopold Leadership Fellow, 2008
- Best Publication, *Coral Reefs*, 2003
- Advanced Study Program Fellowship, NCAR, 1993–95
- Jerald J Cook Memorial Award for best Paper, *8th Thematic Conf. Geol. Remote Sensing*, 1991
- Fulbright Scholarships, 1987, 1988
- Getty Oil Co. Scholarship, 1984
- Texas A&M Univ. Faculty Scholarships, 1982, 1983
- *Undergraduate awards*: Summa cum laude, 1978; Merit Scholarship, 1977; Phi Beta Honor Society; Sigma Xi Honor Society; Sigma Gamma Epsilon Geological Honor Society

## Thesis committees and mentoring

*Lauren Freeman*, Scripps Inst. Oceanography, member of PhD thesis committee

*Nancy Muehlelehner*, Univ. Miami/RSMAS, member of PhD thesis committee

*Hannah Owens*, Univ. Kansas, NCAR host for IGERT study

*Derek Manzello*, Univ. Miami/RSMAS, member of PhD thesis committee

*Hannah Wasserman*, Univ. Colorado, advisor on undergraduate honors research project

*John Guinotte*, Univ. Kansas, member of MS thesis committee

*John Guinotte*, James Cook Univ., member of PhD thesis committee

## Publications

### Theses

MS thesis title: Kleypas, JA 1980. Migration and feeding of predatory fish in an intertidal creek, with special reference to the silver perch (*Bairdiella chrysura* L.), Marine Science Program, University of South Carolina. (Advisor: John Mark Dean)

PhD thesis title: Kleypas, JA 1992. Geological development of fringing coral reefs in the southern Great Barrier Reef, Australia, James Cook Univ. North Queensland, Australia. (Advisor: David Hopley)

### Refereed Journal Articles

1. **Kleypas, JA** and JM Dean, 1983: Migration and feeding of the predatory fish, *Bairdiella chrysura* Lacepede, in an intertidal creek. *J. Exp. Mar. Biol. Ecol.*, 72: 199–209.
2. **Kleypas, JA** and DM Burrage, 1994: Satellite observations of surface circulation patterns in the southern Great Barrier Reef, Australia. *Int. J. Remote Sensing*, 15: 2051–2063.
3. Burrage, DM, CR Steinberg, W Skirving and **JA Kleypas**, 1996: Mesoscale circulation features of the Great Barrier Reef region inferred from NOAA satellite imagery. *Remote Sens. Env.*, 56: 21–41.

4. **Kleypas, JA**, 1996: Coral reef development under naturally turbid conditions: fringing reefs near Broad Sound, Australia. *Coral Reefs*, 15: 153–167.
5. **Kleypas, JA**, 1997: Modeled estimates of global reef habitat and carbonate production since the last glacial maximum. *Paleoceanography*, 12: 533–545.
6. **Kleypas, JA**, J McManus, and L Meñez, 1999: Using environmental data to define reef habitat: Where do we draw the line? *Am. Zool.*, 39: 146–159.
7. **Kleypas, JA**, RW Buddemeier, D Archer, J-P Gattuso, C Langdon and BN Opdyke, 1999: Geochemical consequences of increased atmospheric CO<sub>2</sub> on coral reefs. *Science*, 284: 118–120.
8. Moore, JK, SC Doney, **JA Kleypas**, DM Glover and IY Fung, 2001: An intermediate complexity marine ecosystem model for the global domain. *Deep Sea Research II*, 49: 463–507.
9. **Kleypas, JA**, RW Buddemeier, J-P Gattuso, 2001: The future of coral reefs in an age of global change. *Int. J. Earth Sci.*, 90: 426–437.
10. Doney, SC, **JA Kleypas**, JL Sarmiento and PG Falkowski, 2001: The US JGOFS Synthesis and Modeling Project - An introduction. *Deep Sea Research II*, 49: 1–20.
11. Iglesias-Rodriguez, MD, CW Brown, SC Doney, **J Kleypas**, D Kolber, Z Kolber, PK Hayes, PG Falkowski, 2002: Representing key phytoplankton functional groups in ocean carbon cycle models: coccolithophorids. *Global Biogeochem. Cycles*, 16(4): art. no. 1100.
12. Hughes, TP, AH Baird, DR Bellwood, M Card, SR Connolly, C Folke, R Grosberg, O Hoegh-Guldberg, JBC Jackson, **J Kleypas**, JM Lough, P Marshall, M Nystrom, SR Palumbi, JM Pandolfi, B Rosen and J Roughgarden, 2003: Climate change, human impacts, and the resilience of coral reefs. *Science*, 301: 929–933.
13. Doney, SC and **JA Kleypas**, Eds., 2003: The U.S. JGOFS Synthesis and Modeling Project: Phase II, *Deep-Sea Res. II*, vol. 50.
14. Guinotte, JM, RW Buddemeier and **JA Kleypas**, 2003: Future coral reef habitat marginality: temporal and spatial effects of climate change in the Pacific basin. *Coral Reefs*, 22: 551–558.
15. Sarmiento, S, R Barber, L Bopp, S Doney, AC Hirst, **J Kleypas**, R Mater, U Mikolajewicz, P Monfray, V Soldatov, S Spall, R Slater and R Souffer, 2004: Response of ocean ecosystems to climate warming. *Global Biogeochem. Cycles*, 18: GB3003, doi:10.1029/2003GB002134.
16. **Kleypas, JA**, RW Buddemeier, CM Eakin, J-P Gattuso, J Guinotte, O Hoegh-Guldberg, R Iglesias-Prieto, PL Jokiel, C Langdon, W Skirving and AE Strong, 2005: Comment on "Coral reef calcification and climate change: The effect of ocean warming," *Geophys. Res. Lett.*, 32, L08601, doi:10.1029/2004GL022329.
17. Gattuso, J-P, B Gentili, CM Duarte, **JA Kleypas**, JJ Middelburg and D Antoine, 2006: Light availability in the coastal ocean: impact on the distribution of benthic photosynthetic organisms and their contribution to primary production, *Biogeosciences*, 3: 489–513.
18. **Kleypas, JA** and CM Eakin, 2007: Scientists' perceptions of threats to coral reefs: results of a survey of coral reef researchers, *Bull. Mar. Sci.*, 80, 419–436.
19. Caldeira, K, D Archer, JP Barry, RGJ Bellerby, PG Brewer, L Cao, AG Dickson, SC Doney, H Elderfield, VJ Fabry, RA Feely, J-P Gattuso, PM Haugan, O Hoegh-Guldberg, AK Jain, **JA Kleypas**, C Langdon, JC Orr, A Ridgwell, CL Sabine, BA Seibel, Y Shirayama, C Turley, AJ Watson, RE Zeebe, 2007: Comment on "Modern-age buildup of CO<sub>2</sub> and its effects on seawater acidity and salinity" by Hugo A Loáiciga, *Geophys. Res. Lett.*, 34, L18608, doi:10.1029/2006GL027288.
20. **Kleypas, JA**, G Danabasoglu, and JM Lough, 2008: Potential role of the ocean thermostat in determining regional differences in coral reef bleaching events. *Geophys. Res. Lett.*, 35:L03613, doi:10.1029/2007GL032257

21. **Kleypas, JA**, and O Hoegh-Guldberg, 2008: Coral reefs and global climate change, *Status of Caribbean Coral Reefs after Bleaching and Hurricanes in 2005*, C Wilkinson, Ed., Global Coral Reef Monitoring Network.
22. Manzello, DP, **JA Kleypas**, D Budd, CM Eakin, P.W. Glynn, and C Langdon 2008: Poorly cemented coral reefs of the eastern tropical Pacific: Possible insights into reef development in a high-CO<sub>2</sub> world, *Proc. Nat. Acad. Sci.* **105**, 10450-10455.
23. Dodge, RE, C Birkeland, M Hatzitolos, **J Kleypas**, SR Palumbi, O Hoegh-Guldberg, R Van Woesik, JC Ogden, RB Aronson, BD Causey, and F Stuab, 2008: A call to action for coral reefs, *Science*, **322**, 189-190.
24. Fortier, L, S. Hawkins, **J Kleypas**, H-O Pörtner, and Y Shirayama, Eds. 2008: Effects of Climate Change on Marine Ecosystems, *Climate Research Special* 18, vol. 37.
25. Boylan, P and **J Kleypas**, 2008: New insights into the exposure and sensitivity of coral reefs to ocean warming Proc 11th International Coral Reef Symp, Fort Lauderdale, FL 854-858
26. Doney, SC, VJ Fabry, RA Feely, and **JA Kleypas**, 2009: Ocean acidification: The other CO<sub>2</sub> problem. *Ann. Rev. Mar. Sci.* **1**: 169-192.
27. Feely, RA, JC Orr, VJ Fabry, **J Kleypas**, CL Sabine, C Langdon (2009) Present and future changes in seawater chemistry due to ocean acidification. In: McPherson BJ, Sundquist ET (eds) *Carbon Sequestration and Its Role in the Global Carbon Cycle*. AGU Monograph 22, pp35
28. **Kleypas, JA**, and KK Yates, 2009: Coral reefs and ocean acidification. *Oceanography*, **22**: 108-117.
29. **Kleypas, JA**, 2011: Book review: Guide to Best Practices for Ocean Acidification Research and Data Reporting (eds U Riebesell, VJ Fabry, L Hansson, J-P Gattuso) 2010, *Limnology and Oceanography* **19**(4): 91-92
30. Anthony, KRN, **JA Kleypas**, J-P Gattuso, 2011: Coral reefs modify their seawater carbonate chemistry – implications for impacts of ocean acidification, *Global Change Biology*, **17**(12): 3655-3666
31. **Kleypas, JA**, KRN Anthony, J-P Gattuso, 2011: Coral reefs modify their seawater carbonate chemistry – case study from a barrier reef (Moorea, French Polynesia), *Global Change Biology*, **17**(12): 3667-3678
32. Teneva, L, M Karnauskas, CA Logan, L Bianucci, JC Currie, **JA Kleypas**, 2011: Predicting coral bleaching hotspots: The role of regional variability in thermal stress and potential adaptation rates, *Coral Reefs*, DOI 10.1007/s00338-011-0812-9
33. McLeod, E, A Green, E Game, K Anthony, J Cinner, SF Heron, **J Kleypas**, CE Lovelock, JM Pandolfi, RL Pressey, R Salm, S Schill, C Woodroffe, 2012: Integrating Climate and Ocean Change Vulnerability into Conservation Planning, *Coastal Management*, **40**:6, 651-672
34. Amado Filho, G, RL Moura, AC Bastos, LT Salgado, PY Sumida, AZ Guth, RB Francini Filho, GH Pereira-Filho, DP Abrantes, PS Brasileiro, RG Bahia, RN Leal, L Kaufman, **JA Kleypas**, M Farina, FL Thompson, 2012: Rhodolith beds are major CaCO<sub>3</sub> bio-factories in the tropical South West Atlantic, *PLoS One*, **7**(4): e35171. doi:10.1371/journal.pone.0035171
35. McLeod, E, KRN Anthony, A Andersson, R Beeden, Y Golbuu, **J Kleypas**, K Kroeker, D Manzello, R Salm, H Schuttenberg, JE Smith, 2012: Preparing to manage coral reefs for ocean acidification: Lessons from coral bleaching, *Frontiers in Ecology and the Environment* **2012**; doi:10.1890/110240
36. Latham, J, **J Kleypas**, R Hauser, B Parkes, A Gadian, 2013. Can marine cloud brightening reduce coral bleaching? *Atmospheric Science Letters*, DOI: 10.1002/asl2.442
37. Castruccio, FS, EN Curchitser, **J Kleypas**, 2013. A high-resolution model for investigating climate-driven responses of marine ecosystems in the Coral Triangle, *Journal of Geophysical Research* **118**(11): 6123-6144, DOI: 10.1002/2013JC009196

38. Freeman, LA, **JA Kleypas**, AJ Miller, 2013. Coral reef habitat response to climate change scenarios, *PLoS One* (8912): Article Number: e82404
39. Dorman JG, FS Castruccio, EN Curchitser, **JA Kleypas**, TM Powell, 2014 (accepted). Modeled connectivity of *Acropora millepora* populations from reefs of the Spratly Islands and the greater South China Sea, *Coral Reefs*
40. **Kleypas JA**, FS Castruccio, EN Curchitser, E Mcleod, 2015. The impact of ENSO on coral heat stress in the western equatorial Pacific, *Global Change Biology*, Article first published online: 31 Mar 2015, DOI: 10.1111/gcb.12881
41. Owens H, **JA Kleypas**, submitted. Predicting future distributions of gadine fishes using global climate model data: exploring spatial and environmental variable bias, *Ecological Modelling*
42. **Kleypas, JA**, submitted. More walls to shifting marine habitats. *Science* (Invited Perspective)
43. Mumby P, J Lubchenco, M Beck, K Broad, L Crowder, B Fulton, S Gaines, **J Kleypas**, S Munch, T Okey, J Sanchirico, D Takahashi-Kelso, P Tyedmers, in prep. Global environmental change, ocean health, and ecosystem services: strategies, policies, and tools
44. **Kleypas JA**, D Thompson, F Castruccio, in prep. Does larval connectivity influence heat stress tolerance in coral populations?
45. **Kleypas JA**, ... in prep. High-resolution projection of twenty-first century heat stress in the Coral Triangle.

#### Other Refereed Publications

- Darnell, RM, **JA Kleypas**, and RE Defenbaugh, 1987: *Eastern Gulf shelf bio-atlas: a study of the distribution of demersal fishes and penaeid shrimp of soft bottoms of the continental shelf from the Mississippi River Delta to the Florida Keys*, Minerals Management Service, Gulf of Mexico Outer Continental Shelf Region, U.S. Dept. of the Interior.
- Kleypas, JA**, 1991: Use of AVHRR data to assess environmental controls on reef development in the southern Great Barrier Reef, Australia. *Proc., 8th Thematic Conf. Geol. Remote Sensing*, 265–276.
- Kleypas, JA** and D Hopley, 1994: Reef development across a broad continental shelf, south-central Great Barrier Reef, Australia. *Proc. 7th Int. Coral Reef Symp.*, Guam, 2: 1129–1141.
- Kleypas, J**, 1995: A diagnostic model for predicting global coral reef distribution. *Pacific Congress on Marine Science and Technology (PACON) '94 Proc.: Recent Advances in Marine Science and Technology*, Townsville, Australia, 211–220.
- Kleypas, JA** and BN Opdyke, 1998: Symposium participants assess future of coral reefs. Meeting report to *Eos, Trans. Amer. Geophys. Union*. 79(21): 249, 251, 253.
- Kleypas, JA** and SC Doney, 2001: Nutrients, Chlorophyll, Primary Production and Related Biogeochemical Properties in the Ocean Mixed Layer - A Compilation of Data Collected at Nine JGOFS (Joint Global Ocean Flux Survey) Sites. *NCAR Technical Note NCAR/TN-447+STR*, 55 pp.
- Iglesias-Rodriguez, MD, R Armstrong, R Feely, R Hood, **J Kleypas**, JD Milliman, C Sabine and J Sarmiento, 2002: Progress made in study of ocean's calcium carbonate budget. *Eos, Trans. Amer. Geophys. Union*, 83(34): 365,374–375.
- Kennedy, VA, RR Twilley, **JA Kleypas**, JH Cowan, Jr. and SR Hare, 2002: *Coastal and Marine Ecosystems and Global Climate Change: Potential Effects on U.S. Resources*. Pew Center for Global Climate Change, Arlington, VA, 52 pp.
- Kleypas, JA** and C Langdon, 2002: Overview of CO<sub>2</sub>-induced changes in seawater chemistry. *Proc. 9th Int. Coral Reef Symp.*, Bali, Indonesia, 2: 1085–1089.
- Buddemeier, RW, **JA Kleypas** and R Aronson, 2004: *Coral Reefs and Global Climate Change. Potential Contributions of Climate Change to Stresses on Coral Reef Ecosystems*, Pew Center for Global Climate Change, Arlington, VA, 42 pp.

- Kleypas, JA**, 2005: Coral Reefs and Climate, *The Encyclopedia of World Climates*, J Oliver, Ed., Kluwer Press, 305–306.
- Kleypas, JA**, 2006: Predictions of climate change in the tropical oceans, and how that should shape reef conservation efforts, in *Proc. World Marine Technology Conf.*, London, 8pp (CD-ROM only, ISBN no. 1-902536-54-1).
- Kleypas, JA**, 2006: Constraints on predicting coral reef response to climate change, *Geological Approaches to Coral Reef Ecology*, R Aronson, Ed., Springer-Verlag, 386–424.
- Kleypas, JA** (Lead Author); J-P Gattuso (Topic Editor), 2006: Coral Reefs, *Encyclopedia of Earth*, (Ed. CJ Cleveland), (Wash., DC: Env. Inform. Coal., Nat. Council Sci. and Env.). [First published Oct. 18, 2006]. [http://www.eoearth.org/article/Coral\\_reefs](http://www.eoearth.org/article/Coral_reefs)
- Kleypas, JA**, RA Feely, VJ Fabry, C Langdon, CL Sabine and LL Robbins, 2006: *Impacts of Ocean Acidification on Coral Reefs and Other Marine Calcifiers. A Guide for Future Research*, Report of a workshop sponsored by NSF, NOAA and the USGS. 88 pp.
- Kleypas, JA** and C Langdon, 2006: Coral reefs and changing seawater chemistry, Chapter 5 in *Coral Reefs and Climate Change: Science and Management*, JT Phinney, O Hoegh-Guldberg, J Kleypas, W Skirving and A Strong, Eds., AGU Monograph Series, Coastal and Estuarine Studies, Am. Geophys. Union, Vol. 61, 73–110.
- Phinney, JT, O Hoegh-Guldberg, **J Kleypas**, W Skirving, and A Strong, Eds., 2006: *Coral Reefs and Climate Change: Science and Management*. AGU Monograph Series, Coastal and Estuarine Studies, Am. Geophys. Union, Vol 61, 350 pp.
- Hendee, JC, L Gramer, **JA Kleypas**, D Manzello, M Jankulak, and C Langdon, 2007: The integrated coral observing network: Sensor solutions for sensitive sites, ISSNIP 2007: *Proc., 3<sup>rd</sup> Int. Conf., Intelligent Sensors, Sensor Networks, and Information Processing*, Melbourne, Australia, pp. 669-673.
- Fabry, VJ, C Langdon, WM Balch, A Dickson, R Feely, B Hales, D Hutchins, **J Kleypas**, and C Sabine, 2008: Present and future impacts of ocean acidification on marine ecosystems and biogeochemical cycles (workshop report), *Eos Trans. Am. Geophys. Soc.*, 89, 143-144.
- Eakin CM, **J Kleypas**, and O Hoegh-Guldberg, 2008: 1a. Global Climate Change and Coral Reefs: Rising Temperatures, Acidification and the Need for Resilient Reefs. P. 29-34, In: Wilkinson C. (ed) *Status of Coral Reefs of the World: 2008*. Global Coral Reef Monitoring Network & Reef and Rainforest Research Centre, Townsville, 304 p.
- Anthony, K., B. Causey, E. Conklin, A. Cros, R.A. Feely, J. Guinotte, G. Hofmann, J. Hoffman, P. Jokiel, **J. Kleypas**, P. Marshall, E. McLeod, R. Salm, and J. Veron, 2009: The Honolulu Declaration on ocean acidification and reef management. The Nature Conservancy, Prepared and adopted by participants of the Ocean Acidification Workshop, convened by The Nature Conservancy, 12–14 August 2008, Hawaii, 8 pp.
- Simpson, M.C., D. Scott, M. New, R. Sim, D. Smith, M. Harrison, C.M. Eakin, R. Warrick, A.E.Strong, P. Kouwenhoven, S. Harrison, M. Wilson, G.C. Nelson, S. Donner, R. Kay, D.K. Gledhill, G. Liu, J.A. Morgan, **J.A. Kleypas**, P.J. Mumby, T.R.L. Christensen, M.L. Baskett, W.J. Skirving, C. Elrick, M. Taylor, J. Bell, M. Ruddy, J.B. Burnett, M. Overmas, R. Robertson, and H. Stager (2009) An Overview of Modeling Climate Change Impacts in the Caribbean Region with contribution from the Pacific Islands, United Nations Development Programme (UNDP), Barbados, West Indies, 266 pp.
- Anderson, D., W. Berelson, R. Feely, B. Hönisch, D. Iglesias-Rodriguez, **J. Kleypas**, L. Kump, C. Langdon, L. Peterson, A. Ridgwell, P. Swart, S. Tudhope, and R. Zeebe, 2009: The role of scientific ocean drilling in understanding ocean acidification. In Summary of the Thematic Working Group Meeting, <http://www.us-ocb.org/publications/index.html>, Miami, FL, 7–9 January 2009, 9 pp.
- Kleypas JA**, 2010: Ocean acidification – effects on calcification, in: Hopley, D (ed.) *Encyclopedia of Modern Coral Reefs*, Springer-Verlag.

- Feely RA, VJ Fabry, AG Dickson, J-P Gattuso, J Bjima, U Riebesell, S Doney, C Turley, T Saino, K Lee, K Anthony and **J Kleypas**, 2010: An international observational network for ocean acidification. In *Proceedings of the "OceanObs'09: Sustained Ocean Observations and Information for Society" Conference* (Vol. 2), Venice, Italy, 21–25 September 2009, Hall, J., D.E. Harrison, and D. Stammer, Eds., ESA Publication WPP-306, doi: 10.5270/OceanObs09.cwp.29.
- National Academies of Science, 2010: *Ocean Acidification: A National Strategy to Meet the Challenges of a Changing Ocean*, The National Academy Press, Washington, D.C.
- Robbins LL, M Hansen, **JA Kleypas**, and SC Meyla, 2011: *CO2calc: A User-Friendly Seawater Carbon Calculator for Windows, Mac OS X, and iOS (iPhone)*, Florida Shelf Ecosystems Response to Climate Change Project Ocean Acidification Task: U.S. Geological Survey Open File Report 2010-1280, 27p.
- Robbins LL and **J Kleypas**, 2011: CO2calc: A User-Friendly Seawater Carbon Calculator for Windows, Mac OS X, and iOS (iPhone), *SOLAS News*, Winter 2011, p 16-17.
- Cooley, SR, **J Kleypas**, and H Benway, 2011: U.S. ocean acidification researchers: First national meeting, *Eos Trans. AGU*, 92(36), 299, doi:10.1029/2011EO360002.
- Kleypas JA**, 2011: Altered states: what will coral reefs look like in the future? Paleontological Society Short Course: (George Stanley, ed.) *Corals and Reef Crises, Collapse and Change*, GSA Minneapolis meeting, Oct. 8th, 2011.
- National Academies of Science, 2013. *Review of the Federal Ocean Acidification Research and Monitoring Plan*, The National Academy Press, Washington, D.C. (Committee on the Review of the National Ocean Acidification Research and Monitoring Plan; Ocean Studies Board; Division on Earth and Life Sciences; National Research Council), 80 p.
- IGBP, IOC, SCOR, 2013. *Ocean Acidification Summary for Policymakers – Third Symposium on the Ocean in a High-CO<sub>2</sub> World*. IGBP, Stockholm, Sweden (one of 18 authors).
- Contributing author to WG1 and WG2 IPCC 5th Assessment Reports:  
 IPCC, 2013: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge Univ. Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.  
 - contributed to Ch 3: Observations: Ocean (Coord. lead authors: Rhein, M. and S.R. Rintoul)  
 IPCC, 2014: *Climate Change 2014: Impacts, Adaptation, and Vulnerability* [Field, C., V. Barros, K. Mach and M. Mastrandrea (eds.)]. Cambridge Univ. Press, Cambridge, United Kingdom and New York, NY, USA, xxxx pp.  
 - contributed to Ch 6 – Ocean systems (Coord. lead authors: Pörtner, H.-O. and D. Karl)  
 - contributed to Ch 19 – Emergent risks and key vulnerabilities (Coord. lead authors: Oppenheimer, M. M. Campos, R. Warren)
- Thompson, D, F Castruccio, **J Kleypas**, J Watson, E Curchitser, M Pinsky, 2014. Variability in reef connectivity in the Coral Triangle, *Reef Encounter* 29(2): 46-51.
- Kleypas, JA**, (accepted). The impacts of ocean acidification on marine biodiversity. Chapter in *Climate Change and Biodiversity*, 2<sup>nd</sup> edition, TE Lovejoy and L Hannah (Eds), Yale University Press

## Presentations (since 2007)

- *Fragile Reefs of the Eastern Pacific: Does low cementation provide a model for reefs in a high CO<sub>2</sub> world?* D Manzello, J Kleypas, M Eakin, and D Budd. 2007. AGU Joint Assembly, Acapulco, Mexico, April 2007, *Eos Trans. AGU*, 88(23), Joint Assembly Suppl., Abs.U31A-02.
- *Coral reefs, ocean acidification, and the carbon cycle*, University of Washington Program on Climate Change Summer Institute, 11–13 Sep. 2007 (Invited)

- *Effects of increasing atmospheric CO<sub>2</sub> on coral reef ecosystems: ocean warming and ocean acidification*, JA Kleypas, 42<sup>nd</sup> European Marine Biology Symp. / Inter-Research Symp., Kiel, Germany, 27–31 Aug. 2007 (Invited Keynote)
- *How ocean acidification affects corals, coral communities, and reefs*. National Academy of Sciences Kavli Frontiers in Science, Irvine, CA, Nov. 2007. (Invited)
- *Coral reefs and the global CaCO<sub>3</sub> budget*. JA Kleypas, NOAA “Think Tank 5: A Strategic Planning Session for Ocean Acidification Research” Little Cayman Island Research Station, Dec. 2007 (Invited)
- *The Ocean Carbon and Biogeochemistry Program*. with T Richardson, OCB Townhall Meeting at the ASLO Annual Meeting, Santa Fe, NM, Feb. 2007.
- *Coral reefs and climate change – If it ain’t one thing, it’s another*. New England Aquarium, Boston, MA, April 2007 (Invited)
- *Are coral reefs the litmus test for ocean acidification?* Rice Univ., Houston, April 2007 (Invited)
- *The potential role of thermostatic mechanisms in determining regional differences in coral reef bleaching events*, JA Kleypas, G Danabasoglu, and JM Lough, Ocean Sciences Meeting, Orlando, FL, March 2008.
- *Mission possible: Helping coral reefs through the climate crisis* (Invited plenary), 11<sup>th</sup> Int. Coral Reef Symp., Ft. Lauderdale FL, Jul 2008
- *New insights into the exposure and sensitivity of coral reefs to ocean warming* (with Patrick Boylan), 11<sup>th</sup> Int. Coral Reef Symp., Ft. Lauderdale FL, Jul 2008
- *Coral reef vulnerability in light of the ocean thermostat and ocean acidification and implications for conservation*, The Nature Conservancy workshop on ocean acidification, Kaneohe, HI, Aug 2008 (Invited)
- *Poorly cemented coral reefs of the eastern tropical Pacific: possible insights into reef development in a high-CO<sub>2</sub> world* (with Derek Manzello), The Ocean in a High-CO<sub>2</sub> World, Monaco, Oct 2008
- *Ocean acidification*, EUR-OCEANS Open European Conference on "Global Change and Marine Ecosystems" Rome, Italy, 25-27 Nov 2008 (Invited)
- *Coral reefs and the carbon cycle*, Consortium for Ocean Leadership Meeting on Ocean Acidification, Miami, FL, Dec 2008 (Invited)
- *A simple model of carbonate chemistry changes across the Moorea coral reef flat* (Invited), IAEA, Monaco, Dec 2008 (Invited)
- *Coral reefs and ocean acidification*, JA Kleypas, University of Wyoming, Feb 2009 (Invited)
- *Pacific acidification: predictions, past, perceptions, preventions* (Plenary), 11<sup>th</sup> Pacific Science Intercongress, Tahiti, French Polynesia, 2-6 Mar 2009 (Invited)
- *Coral reefs and ocean acidification*, Univ. California, Santa Cruz, Apr 2009 (Invited)
- *Ocean acidification for the utterly confused*, Univ. California-Santa Cruz, Santa Cruz, CA, Apr 2009 (Invited Public Lecture).
- *Coral reefs and ocean acidification* (Invited), Univ. South Carolina, Columbia, SC (Apr 2009).
- *Ocean acidification: A simple concept with complex findings* (Invited Plenary), AGU Joint Assembly, Toronto, Canada, 24-27 May 2009 [The Rachel Carson Award Lecture].
- *What’s all this fuss (fizz?) about ocean acidification?* Univ. Colorado, Sep 2009 (Invited)
- *Ocean acidification – what are we afraid of?* 2009 Munson Distinguished Lecture Series on Ocean Acidification, Yale School of Forestry and the Environmental Studies, Oct 2009 (Invited)
- *Changing Climate – Changing Ocean*. Tipping Point Conference, British Council and Earth Institute of Columbia University, Dec 2010 (Invited).



- *Balancing the budget on coral reefs*. 2010 AAAS meeting, session on: Will Coral Reefs Disappear – Separating Fact from Fiction, San Diego, CA, Feb 2010
- *Predicting coral bleaching events: considerations of adaptation rates and natural variability*, 2010 Ocean Sciences Meeting, Portland OR (with L Bianucci, J Currie, M Karnauskas, C Logan, L Teneva) POSTER, Feb 2010.
- *The clear causes and muddy effects of ocean acidification*. Eminent Scholar Series, Univ. S. Florida College of Marine Science, St Petersburg, FL, March 2010 (Invited)
- *Ocean acidification for the utterly confused*. NCAR 50<sup>th</sup> Anniversary Public Presentation, Boulder, CO, May 2010 (Invited)
- *A simple model of carbonate chemistry changes across the Moorea coral reef flat*. The Nature Conservancy conference: How can climate change models inform conservation planning in the Coral Triangle? Brisbane, Australia, May 2010 (Invited)
- *Coral Reef Environment – report to the Ocean Acidification Task Force of ORRAP*, Washington, DC, June 2010.
- *Is ocean acidification a human health problem?* Gordon Research Conference on Oceans and Human Health, Univ. New England, Biddeford, NE, June 2010 (invited).
- *OCB Ocean Acidification 2009-2010 Update* (with S. Cooley and R. Feely), OCB Summer Meeting, La Jolla CA, July 2010.
- *Coral reef ecosystems: Challenges to modeling climate change impacts*. CLIVAR WGOMD-GSOP Workshop on Decadal Variability, Predictability, and Prediction, Boulder CO, Sep 2010 (Invited)
- *Clear causes and muddy effects of ocean acidification*. University of Arizona, School of Earth and Space Exploration, Oct 2010 (Invited)
- *Impacts of ocean acidification on coral reefs*. Geological Society of America Annual Meeting, Pardee session, Impacts of Ocean Acidification: The Other CO<sub>2</sub> Crisis, Denver CO, Nov 3, 2010 (Invited).
- *Ocean acidification for the utterly confused*. Denver Mensa Assoc., Denver CO, Nov 2010 (Invited).
- *Changing climate – changing ocean: Ocean Acidification*. Presentation for the International Visitor Leadership Program, Boulder, CO, Jun 06, 2011.
- *Impacts of ocean acidification on marine organisms and ecosystem processes*. 3<sup>rd</sup> Brazilian Congress of Marine Biology, Natal, Brazil, May 15-19, 2011 (Invited).
- *Ocean Acidification*. Presentation for NSF Director Subra Suresh, NCAR, Boulder CO, Jun 07, 2011.
- Open Presentation. Panel discussion following showing of the film: “There Once Was an Island”, Denver Botanical Gardens, Denver CO, Jul 19. 2011.
- *Altered states: what will coral reefs look like in the future?* Paleontological Society Short Course: *Corals and Reef Crises, Collapse and Change*, GSA Minneapolis meeting, Oct. 8<sup>th</sup>, 2011 (Invited).
- *Changing climate – changing ocean: Ocean Acidification*. Presentation for the University of Colorado Conservation Biology Program, Boulder CO, October 14, 2011 (Invited).
- *Impacts of ocean acidification on coral reefs*. Geological Society of America Annual Meeting, Pardee session, Impacts of Ocean Acidification: The Other CO<sub>2</sub> Crisis, Denver CO, Nov 2011 (Invited).
- *Ocean Acidification*. Presentation for the Scripps Journalism Fellowship, NCAR, Boulder, CO, Mar 2012.
- *The interplay between coral reef communities and seawater chemistry: Implications for the impacts of ocean acidification*. Ocean Sciences, AGU Fall Meeting, San Francisco CA, Dec 2011 (poster with K Anthony and J-P Gattuso).

- *The interplay between coral reef communities and seawater chemistry: Implications for the impacts of ocean acidification.* Ocean Sciences, Salt Lake City UT, Feb 2012 (poster with K Anthony and J-P Gattuso).
- *Prospects for marine ecosystems with acidification and increased ocean temperature,* Aspen Global Change Institute: Climate Sensitivity on Decadal to Century Timescales: Implications for Civilization, Aspen CO, Jun 2012 (Invited)
- *A high-resolution model for the Coral Triangle.* Ocean Sciences, Salt Lake City UT, Feb 2012 (poster with F Castruccio and E Curchitser).
- *A high-resolution model for the Coral Triangle,* 12<sup>th</sup> International Coral Reef Symposium, Cairns Australia, Jul 9-13, 2012 (presented by Z Powell, with F Castruccio and E Curchitser).
- *High-resolution modeling in the Coral Triangle Region,* 2<sup>nd</sup> Annual Front Range HPC Symposium, Fort Collins, Fort Collins CO, Aug 12, 2012 (with F Castruccio, E Curchitser and Z Powell)
- *Ocean acidification, the other CO<sub>2</sub> problem,* Making Waves in Colorado, Boulder CO, Oct 12-13 (Invited)
- *Science summary of the Third Ocean in a High-CO<sub>2</sub> World Meeting,* Monterey CA, Sep 27, 2012 (special presentation for Scientists, Policymakers, and the Public).
- *Coral reefs on planet Earth,* Boulder County Jail, Boulder CO, Dec 13, 2012
- *An assessment of coral reef habitat suitability under 21<sup>st</sup> Century climate change scenarios* (poster presented by LA Freeman, with JA Kleypas, AJ Miller, RD Norris). International Biogeography Society 6<sup>th</sup> Biennial Conference, Miami, Jan 2013 (Best student poster award)
- *Vital components and questions for transformative research in ocean acidification,* Mote Marine Lab, Sarasota FL, Mar 12-13, 2013 (Invited)
- *Bad chemistry: Update on the impacts of ocean acidification on coral reefs,* Univ. Kansas IGERT Program, Lawrence KS, Apr 1, 2013 (Invited)
- *Ocean acidification,* Presentation for the National Resources Defense Council visit to NCAR, Boulder CO, Apr 5, 2013
- *Ocean acidification and its impacts on coral reefs,* Presentation to the Boulder City Council, Boulder CO, May 21, 2013 (Invited; televised)
- *Bad chemistry: Update on the impacts of ocean acidification on coral reefs,* Bodega Bay Marine Lab, University of California-Davis, May 29, 2013 (Invited)
- *Data-related challenges of interdisciplinary research,* EarthCube Water Column Domain End-User Workshop, Woods Hole Oceanographic Institution, Woods Hole MA, Oct 8, 2013 (Invited)
- *Climate change and marine ecosystems,* UCAR meeting with NOAA/NOS director Russell Callendar at UCAR, Aug 14, 2013
- *The impacts of climate extremes on ocean ecosystems,* 11th Computing in Atmospheric Sciences Workshop, Annecy, France, Sep 12, 2013 (Invited)
- *Coral reefs in a changing climate,* NNOCCI (National Network for Ocean and Climate Change Interpretation), Boston MA, Oct 2, 2013 (Invited)
- *Climate change impacts on coral reefs,* Scripps Journalism Fellows, NCAR, Oct, 2013
- *Ocean acidification and its impacts on coral reefs,* Univ. Colorado ATOC Ocean Seminar, Nov 4, 2013 (Invited)
- *High-resolution modeling in the Coral Triangle,* JIMAR/PIFSC Symposium, Nov 19, 2013 (Invited)
- *How things have changed: Fifteen years of ocean acidification research on coral reefs.* Rutgers University Guest speaker, February 9, 2014 (Invited)

- *Are there thermal refugia for coral reefs in the Coral Triangle?* 2014 Ocean Sciences Meeting, Honolulu, HI Feb 23-28 (with Castruccio, Curchitser, Mcleod) POSTER, Abstract ID: 15169.
- Co-author on three additional posters at the 2014 Ocean Sciences meeting:
  - *Climate, bleaching and connectivity in the Coral Triangle* (Curchitser, Castruccio, Kleypas, Pinsky, Watson) POSTER, Abstract ID: 15086,
  - *A framework for investigating the impacts of changing temperature and circulation on coral connectivity in the Coral Triangle* (Castruccio, Kleypas, Curchitser, Pinsky, Watson) POSTER, Abstract ID: 16259.
  - *Seasonal and interannual variability of Acropora millepora connectivity in the Spratly Islands* (Dorman, Castruccio, Powell, Kleypas, Curchitser) POSTER, Abstract ID: 16856.
- *What does the future hold for coral reefs?* OceanFirst Divers, Boulder CO, Apr 30, 2014 (Invited)
- *Climate, bleaching, and connectivity in the Coral Triangle*, 19<sup>th</sup> CESM Workshop, Breckenridge CO, Jun 16-19 (lead: Castruccio, also with Curchitser), 2014 (POSTER)
- *Variability in reef connectivity in the Coral Triangle* (Thompson, Castruccio, Kleypas, Curchitser, Pinsky, Watson), 19<sup>th</sup> CESM Workshop, Breckenridge, Jun 16-19, 2014 (POSTER)
- *Changing climate, bleaching and connectivity in the Coral Triangle* (Castruccio, Kleypas, Thompson, Curchitser, Pinsky, Watson, Mcleod), 2<sup>nd</sup> International Ocean Research Conference, Nov 17, 2014
- *How things have changed. Fifteen years of Ocean Acidification Research on Coral Reefs*, Gordon Research Conference on “Ocean Global Change Biology,” Waterville NH, Jul 6, 2014 (Invited)
- *Climate change and coral reefs*, NCAR Journalism Fellows, NCAR, Boulder CO, Jul 21, 2014 (Invited)
- *All we are saying is give reefs a chance*, Shark Bait Dive Club, Denver CO, Jul 24, 2014 (Invited)
- *Doomsday versus hope. Research and messaging for coral reef response to climate change* AGCI meeting on Furthering the Understanding of Earth Systems and Global Environmental Change, Aspen CO, Aug 17, 2014 (Invited)
- *Coral reefs and climate change – An ecosystem meets its match*, AGCI Robert Orr Roberts Public Lecture, Aspen CO, Aug 19, 2014 (Invited)
- *Ten years to FOARAM. Perspectives on ocean acidification and policy*, Pew Fellows Annual Meeting, Cavallo Point CA, Nov 9, 2014 (Invited)
- *Using the Coral Triangle Regional Ocean Model System (CT-ROMS) to understand ocean acidification in Indonesia*, Presentation to Ikatan Sarjana Oseanologi Indonesia, Jakarta, Nov 18, 2014 (Invited) [presented by Rusty Brainard of NOAA]
- *The hunt for reef refugia in the Coral Triangle*, University of Colorado School of the Environment and Sustainability, Boulder CO, Apr 1, 2015 (Invited)
- *The hunt for reef refugia in the Coral Triangle using oceanographic models*, Geophysical Fluid Dynamics Laboratory, Princeton NJ, Apr 8, 2015 (Invited)
- *The hunt for reef refugia. Finding ways to assist reef survival in a changing ocean*, Colorado Ocean Coalition, Boulder CO, May 6, 2015 (Invited)

## **Congressional Testimony and Briefings**

- *Implications of ocean acidification for marine life*, JA Kleypas, Briefing for House members and Congressional staff, 23 May 2006, Washington DC, May 2006.

- Written testimony to the U.S. Senate Committee on Environment and Public Works, April 17, 2007
- Oral and written testimony to the U.S. House Subcommittee on Fisheries, Wildlife, and Oceans, April 17, 2007: Hearing on: *Wildlife and Oceans in a Changing Climate*, Washington DC
- Oral and written testimony to the U.S. House of Representatives Select Committee on Energy Independence and Global Warming, 29 April 29, 2008: Hearing on: *Global Warming's Impact on the Oceans*, Washington, DC
- Oral and written testimony to the U.S. House of Representatives Committee on Science and Technology, Subcommittee on Energy and Environment, June 05, 2008: Hearing on: *The Federal Ocean Acidification Research and Monitoring Act: H.R. 4174*, Washington DC
- *Preparing our coastal economies for change: A changing "pH budget" in estuaries and nearshore waters*, JA Kleypas, Briefing for members and staff of the House and Senate, Washington DC, June 13, 2011.