

Publications by Raymond Najjar

Journal articles

- Najjar, R.G., Pyke, C.R., Adams, M.B., Breitburg, D., Hershner, C., Kemp, M., Howarth, R., Mulholland, M., Paolisso, M., Secor, D., Sellner, K., Wardrop, D., Wood, R., 2010. Potential climate-change impacts on the Chesapeake Bay. *Estuarine, Coastal, and Shelf Science*, 86, 1-20.
- Shorr, N., A. Amato, S. Graham, and R. Najjar. 2009. Climate change impacts on household heating and cooling in the Northeast US compared to those of purposive behaviors. *Climate Research*, 39, 19-30.
- Najjar, R. G., L. Patterson and S. Graham. 2009. Climate simulations of major estuarine watersheds in the Mid-Atlantic region of the United States. *Climatic Change*, 95, 139-168.
- Wu, S.-Y., R. G. Najjar, and J. Siewert. 2009. Potential impacts of sea-level rise on the Mid- and Upper-Atlantic Region of the United States. *Climatic Change*, 95, 121-138.
- Fennel, F., J. Wilkin, M. Previdi, and R. Najjar. 2008. Denitrification effects on air-sea CO₂ flux in the coastal ocean: Simulations for the Northwest North Atlantic. *Geophysical Research Letters*, 35, L24608, doi:10.1029/2008GL036147.
- Hilton, T. H., R. G. Najjar, L. Zhong, and M Li. 2008. Is there a signal of sea-level rise in Chesapeake Bay salinity? *Journal of Geophysical Research*, 113, C09002, doi:10.1029/2007JC004247.
- Gabric, A. J., P. Matrai, R. Cropp, J. Dacey, J. DiTullio, D. J. Kieber, R. P. Kiene, R. G. Najjar, R. Simó, and D. A. Toole. 2008. Factors determining the vertical profile of dimethylsulfide in the Sargasso Sea during summer. *Deep-Sea Research II*, 55, 1505-1518.
- Bailey, K. E., D. A. Toole, B. Blomquist, R. G. Najjar, B. Huebert, D. J. Kieber, R. P. Kiene, P. Matrai, G. R. Westby, and D. A. del Valle. 2008. Dimethylsulfide production in Sargasso Sea eddies. *Deep-Sea Research II*, 55, 1491-1504.
- Hoffman, E., J.-N. Druon, K. Fennel, M. Friedrichs, D. Haidvogel, C. Lee, A. Mannino, C. McClain, R. Najjar, J. O'Reilly, D. Pollard, M. Previdi, S. Seitzinger, J. Siewert, S. Signorini, and J. Wilkin. 2008. Eastern US continental shelf carbon budget: Integrating models, data assimilation, and analysis. *Oceanography*, 21(1), 86-104.
- Zafiriou, O. C., H. Xie, N. B. Nelson, R. G. Najjar, and W. Wang. 2008. Diel carbon monoxide cycling in the upper Sargasso Sea near Bermuda at the onset of spring and in midsummer. *Limnology and Oceanography*, 53, 835-850.
- Najjar, R. G., and 22 others. 2007. Impact of circulation on export production, dissolved organic matter and dissolved oxygen in the ocean: Results from Phase II of the Ocean Carbon-cycle Model Intercomparison Project (OCMIP-2), *Global Biogeochemical Cycles*, 21, GB3007, doi:10.1029/2006GB002857.
- Jin, X., R. G. Najjar, F. Louanchi, and S. C. Doney. 2007. A Modeling Study of the Seasonal Oxygen Budget of the Global Ocean. *Journal of Geophysical Research*, 112, C05017, doi:10.1029/2006JC003731.
- Berelson, W. M., W. M. Balch, R. Najjar, R. A. Feely, C. Sabine, K. Lee. 2007. Relating estimates of CaCO₃ production, export, and dissolution in the water column to measurements of CaCO₃ rain into sediment traps and dissolution on the sea floor: A

- revised global carbonate budget. *Global Biogeochemical Cycles*, 21, GB1024, doi: 10.1029/2006GB002803.
- Friis, K., R.G. Najjar, M.J. Follows, S. Dutkiewicz, A. Körtzinger, and K.M. Johnson. 2007. Dissolution of calcium carbonate: Observations and model results in the North Atlantic. *Biogeosciences*, 4, 205-213.
- Friis, K., R. G. Najjar, M. J. Follows, and S. Dutkiewicz. 2006. Possible overestimation of shallow-depth calcium carbonate dissolution in the ocean. *Global Biogeochemical Cycles*, 20, GB4019, doi:10.1029/2006GB002727.
- Reed, P. M., R. P. Brooks, K. J. Davis, D. R. DeWalle, K. A. Dressler, C. J. Duffy, H. Lin, D. A. Miller, R. G. Najjar, K. M. Salvage, T. Wagener, and B. Yarnal. 2006. Bridging river basin scales and processes to assess human-climate impacts and the terrestrial hydrologic system. *Water Resources Research*, 42, W07418, doi:10.1029/2005WR004153.
- Orr, J. C. and 26 others. 2005. Anthropogenic ocean acidification over the 21st Century and its impact on marine calcifying organisms. *Nature*, 437, 681-686.
- Matsumoto, K. and 31 others. 2004. Evaluation of ocean carbon cycle models with data-based metrics. *Geophysical Research Letters*, 31, doi:10.1029/2003GL018970.
- Doney, S.C. and 27 others. 2004. Evaluating global ocean carbon models: the importance of realistic physics, *Global Biogeochemical Cycles*, 18, GB3017, doi:10.1029/2003GB002150.
- von Hobe, M., R. G. Najjar, A. J. Kettle and M. O. Andreae. 2003. Photochemical and physical modeling of carbonyl sulfide in the ocean. *Journal Geophysical Research*, 108, 3229-3244.
- Najjar, R. G., G. Nong, D. Seidov and W. Peterson. 2002. Modeling geographic impacts on early Eocene ocean temperature. *Geophysical Research Letters*, 29, 10.1029/2001GL014438.
- Dutay, J.-C. and 28 others. 2002. Evaluation of ocean model ventilation with CFC-11: comparison of 13 global ocean models. *Ocean Modelling*, 4, 89-120.
- Gabric, A., W. Gregg, R. G. Najjar and D. J. Erickson III. 2001. Modelling the biogeochemical cycle of dimethylsulfide in the upper ocean: A review. *Chemosphere - Global Change Science*, 3, 377-392.
- Ono, S., A. Ennyu, R. G. Najjar and N. Bates. 2001. Shallow remineralization in the Sargasso Sea estimated from seasonal variations in oxygen, dissolved inorganic carbon and nitrate. *Deep-Sea Research II*, 48, 1567-1582.
- Louanchi, F. and R. G. Najjar. 2001. The mean annual cycle of nutrients and oxygen in the North Atlantic Ocean. *Deep-Sea Research I*, 48, 2155-2171.
- Hotinski, R. M., K. L. Bice, L. R. Kump, R. G. Najjar and M. A. Arthur. 2001. Ocean stagnation and end-Permian anoxia. *Geology* 29, 7-10.
- Preiswerk, D. and R. G. Najjar. 2000. A global, open ocean model of OCS and its air-sea flux. *Global Biogeochemical Cycles* 14, 585-598.
- Gibson, J. and R. G. Najjar. 2000. The response of Chesapeake Bay salinity to climate-induced changes in streamflow. *Limnology and Oceanography*, 45, 1764-1772.
- Nong, G. T., R. G. Najjar, D. Seidov and W. H. Peterson. 2000. The impact of Drake Passage on the thermal structure of the ocean. *Geophysical Research Letters*, 27, 2689-2692.

- Najjar, R. G. and R. F. Keeling. 2000. Mean annual cycle of the air-sea oxygen flux: A global view. *Global Biogeochemical Cycles*, 14, 573-584.
- Louanchi, F. and R. G. Najjar. 2000. A global monthly mean climatology of phosphate, nitrate and silicate in the upper ocean: Spring-summer production and shallow remineralization. *Global Biogeochemical Cycles*, 14, 957-977.
- Najjar, R.G., H.A. Walker, P.J. Anderson, E.J. Barron, R. Bord, J. Gibson, V.S. Kennedy, C.G. Knight, P. Megonigal, R. O'Connor, C.D. Polsky, N.P. Psuty, B. Richards, L.G. Sorenson, E. Steele, and R.S. Swanson. 2000. The potential impacts of climate change on the Mid-Atlantic Coastal Region. *Climate Research*, 14, 219-233.
- Hotinski, R. M., L. R. Kump and R. G. Najjar. 2000. Opening Pandora's Box: The impact of open system modeling on interpretations of anoxia. *Paleoceanography*, 15, 267-279.
- Najjar, R. G. and R. F. Keeling. 1997. Analysis of the mean annual cycle of the dissolved oxygen anomaly in the World Ocean. *Journal of Marine Research*, 55, 117-151.
- Doney, S. C., D. M. Glover, and R. G. Najjar. 1996. A new coupled, one-dimensional biological-physical model for the upper ocean: Application to the JGOFS Bermuda Atlantic Time-series Study (BATS) site. *Deep-Sea Research II*, 43, 591-624.
- Doney, S. C., R. G. Najjar, and S. Stewart. 1995. Photochemistry, mixing, and diurnal cycles in the upper ocean. *Journal of Marine Research*, 53, 341-369.
- Keeling, R. F., R. G. Najjar, M. L. Bender and P. P. Tans. 1993. What atmospheric oxygen measurements can tell us about the global carbon cycle. *Global Biogeochemical Cycles*, 7, 37-67.
- Levitus, S., J. Reid, M. E. Conkright, R. G. Najjar, and A. Mantyla. 1993. Distribution of phosphate, nitrate and silicate in the world oceans. *Progress in Oceanography*, 31, 245-273.
- Najjar, R. G., J. L. Sarmiento and J. R. Toggweiler. 1992. Downward transport and fate of organic matter in the ocean: simulations with a general circulation model. *Global Biogeochemical Cycles*, 6, 45-76.
- Sarmiento, J. L., J. R. Toggweiler and R. G. Najjar. 1988. Ocean carbon-cycle dynamics and atmospheric $p\text{CO}_2$. *Philosophical Transactions of the Royal Society of London, A* 325, 3-21.
- Najjar, R. G. and C. Laohakul. 1986. An approximate solution to the Graetz problem with axial conduction and prescribed wall heat flux. *International Communications in Heat and Mass Transfer*, 13, 315-324.

Book Chapters

- Najjar, R. G. 1992. Marine Biogeochemistry. In: *Climate System Modeling*, Trenberth, K. (ed.), Cambridge University Press, Cambridge, England, 241-280.
- Najjar, R. G., D. J. Erickson III, and S. Madronich. 1995. Modeling the air-sea fluxes of gases formed from the decomposition of dissolved organic matter: Carbonyl sulfide and carbon monoxide. In: *The Role of Non-living Organic Matter in the Earth's Carbon Cycle*, Zepp, R. and C. Sonntag (eds.), 106-132, John Wiley, New York.

Technical Reports, Conference Proceedings, Newsletters, etc.

- Najjar, R.G. 2009. The dark side of marine carbon. *Nature Geoscience*, 2, 603-604.
- Shortle, J., Abler, D., Blumsack, S., Crane, R., Kaufman, Z., McDill, M., Najjar, R., Ready, R., Wagener, T., Wardrop, D. 2009. Pennsylvania Climate Impact Assessment, Report to the Department of Environmental Protection, Environment and Natural Resources Institute, The Pennsylvania State University. 350 pp.
- Pyke, C. R., R. G. Najjar, M. B. Adams, D. Breitburg, M. Kemp, C. Hershner, R. Howarth, M. Mulholland, M. Paolisso, D. Secor, K. Sellner, D. Wardrop, and R. Wood. 2008. Climate Change and the Chesapeake Bay: State-of-the-Science Review and Recommendations. A Report from the Chesapeake Bay Program Science and Technical Advisory Committee (STAC), Annapolis, MD. 59 pp.
- Ocean ITI Working Group. 2004. Trends in information Technology Infrastructure in the Ocean Sciences, 24 pp., www.geo-prose.com/oceans_iti_trends.
- National Research Council, 2003. Understanding Climate Change Feedbacks. National Academy Press, Washington, D.C., 152 pp.
- Najjar, R. G., N. Gruber and J. C. Orr. 2001. Predicting the ocean's response to rising CO₂: The Ocean Carbon Cycle Model Intercomparison Project. *U.S. JGOFS News*, 11(1), 1-4.
- Orr, J. C., P. Monfray, E. Maier-Reimer, J. R. Palmer and R. G. Najjar. 1997. Transition time for ocean carbon-cycle model comparison. *Research GAIM*, 1 (2), 8-11.
- Najjar, R. G. 1995. Three-dimensional models of the marine carbon cycle. In: Speranza, A., S. Tibaldi and R. Fantechi, *Global Change, Proceedings of the First Demetra Meeting*, Chianciano, Italy, pp. 246-264. European Commission, Luxembourg.
- Najjar, R. G. and J. R. Toggweiler. 1993. Reply to the comment by Jackson. *Limnology and Oceanography*, 38, 1331-1332.
- Najjar, R. G. 1990. Simulations of the phosphorus and oxygen cycles in the world ocean using a general circulation model, Ph.D. thesis, Princeton University, 190 pp.
- Sarmiento, J. L., M. Fasham, U. Siegenthaler, R. Najjar and J. R. Toggweiler. 1989. Models of chemical cycling in the oceans II: a progress report. Ocean Tracers Laboratory Technical Report # 6, Princeton University.
- Toggweiler, J. R., J. L. Sarmiento, R. Najjar and D. Papademetriou. 1987. Models of chemical cycling in the oceans: a progress report. Ocean Tracers Laboratory Technical Report #4, Princeton University.