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Department of Geology and Geophysics  
Staff Chemist, National Ocean Sciences Accelerator Mass Spectrometer Facility  
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### **Professional Interests:**

The study and use of carbon isotope techniques to quantify biogeochemical processes; the study of the fate of organic matter, natural and anthropogenic, in the oceans and atmosphere; development of techniques for analysis of oceanographic samples by AMS.

### **Education:**

B.S. Chemistry, Trinity College, Hartford, CT, 1978

Ph.D. Chemical Oceanography, Joint Program in Oceanography, Woods Hole Oceanographic Institution/Massachusetts Institute of Technology, Woods Hole, MA, 1986.

Thesis Title: *A Study of the Remineralization of Organic Carbon in Nearshore Sediments Using Carbon Isotopes.*

### **Professional Experiences:**

2019-Present	Senior Research Specialist, Department of Geology and Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA.
2002-2019	Senior Research Specialist, National Ocean Sciences Accelerator Mass Spectrometer Facility, Woods Hole Oceanographic Institution, Woods Hole, MA.
1993-2002	Research Specialist, National Ocean Sciences Accelerator Mass Spectrometer Facility, Woods Hole Oceanographic Institution, Woods Hole, MA.
1989-1993	Research Associate, National Ocean Sciences Accelerator Mass Spectrometer Facility, Woods Hole Oceanographic Institution, Woods Hole, MA.
1988-1989	Research Scientist, Battelle Ocean Sciences, Duxbury, MA.
1988	Visiting Investigator with Dr. Glenn A. Jones, Woods Hole Oceanographic Institution, Woods Hole, MA.
1988	Visiting Lecturer and Post-doctoral Investigator, Massachusetts Institute of Technology, Cambridge, MA.
1986-1988	Visiting Investigator with Drs. Cindy Lee, Stuart Wakeham, and Ellen Druffel, Woods Hole Oceanographic Institution, Woods Hole, MA.
1980-1986	Graduate Research Fellow, Woods Hole Oceanographic Institution, Woods Hole, MA.
1979-1980	Research Assistant, Dr. R.B. Merrifield, Rockefeller University, New York, NY.

### **Professional Memberships:**

Phi Beta Kappa, American Geophysical Union, American Chemical Society

### **Professional Activities and Invited Talks:**

23<sup>rd</sup> *International Radiocarbon Conference*, plenary speaker and member of Scientific Organizing Committee, Trondheim, Norway, June 2018.

Associate Editor, *Radiocarbon*

14<sup>th</sup> *International Conference on AMS*, member of Scientific Committee and co-convener of Small Sample Workshop, Ottawa, August 2017.

*NSF Sponsored Workshop: Thermal Analysis of Natural Organic Matter*, co-convener, WHOI, Woods Hole, MA, September 2016.

- 21<sup>st</sup> International Radiocarbon Conference, member of Science Committee and session convener, Paris, France, July 2012.
- International Workshop on Small Scale Radiocarbon Analysis, Invited participant/presenter, Zurich, Switzerland, September 2011.
- Compound Specific Radiocarbon Analyses, Organized and chaired special session, 10<sup>th</sup> International Conference on Accelerator Mass Spectrometry in Berkeley, CA, September 2005.
- Reference Materials for Ocean Sciences, committee member, Committee charged by the National Research Council of the National Academy of Sciences to recommend reference materials for ocean science studies. June 2001-December 2002.
- 17<sup>th</sup> International Radiocarbon Conference, member of International Advisory Board, Jerusalem Israel, June 2000.
- Workshop on Sample Preparation, organizer of workshop at AMS-8, the 8<sup>th</sup> International conference on Accelerator Mass Spectrometry, Vienna, Austria, September 1999.
- AMS and the Ocean: Tracing Natural Processes with Rare Isotopes, session chairperson, 216<sup>th</sup> ACS National Meeting, Boston, MA, August 1998.
- Carbon in the Oceans, Scientific Coordinator and Chairperson for pre-conference workshop, 15<sup>th</sup> International Radiocarbon Conference, Glasgow, Scotland, August 1994.
- Carbon cycling in coastal sediments: The use of carbon isotope ratios to investigate the oxidation of organic matter, presented at the Symposium on Organic Substances and Sediments in Water. American Chemical Society Meeting, Boston, April 1990.
- The oxidation of organic carbon in marine sediments - from thermodynamics to the environment, presented to New England Association of Chemistry Teachers, 51<sup>st</sup> Summer Conference. Roger Williams College, August 1989.

### **Education Activities:**

#### Courses Taught -

Aquatic Chemistry and Biology Laboratory, lecture and laboratory course, MIT.

#### Student Supervision

Hadley McIntosh, University of Maryland, 2015-present, thesis committee member  
Sarah Rosengard, MIT/WHOI Joint Program, 2013- 2016, thesis committee member  
Kalina Gospodinova, MIT/WHOI Joint Program, 2010-2012, Advisor  
Haiwei Shen, GSO/URI,NOSAMS Intern, 2006-7, thesis committee member  
Ann Pearson, MIT/WHOI Joint Program, 1994 - 1999, co-chair, thesis committee.

Jill Arriola, UNC-Chapel Hill, NOSAMS Intern 2019  
Margot White, UCSD, NOSAMS Intern 2019  
Sheron Luk, MIT/WHOI Joint Program, 2017-2018  
Beverly Barnett, University of Florida, NOSAMS Intern 2018  
Jordon Hemingway, Chair, doctoral thesis defense, MIT/WHOI Joint Program 2016  
Craig Connolly, UT Port Aransas, NOSAMS Intern, 2016  
Gen Li, University of Southern California, NOSAMS Intern, 2016  
Kelsey Rogers, USF, NOSAMS Intern, 2016  
Caroline Cobb, Rice University, Guest Student, Summer 2016  
Sarah Bercovici, RSMAS, NOSAMS Intern, 2014-2015  
William Longo, Brown University, NOSAMS Intern, 2014-2015  
Katherine Grant, Cornell University, NOSAMS Intern, 2014-2015  
Sophie Hines, California Institute of Technology, NOSAMS Intern, 2012-2013  
Elizabeth Williams, Tulane, NOSAMS Intern, 2011-2012  
Ben Gagliotti, U Alaska, Fairbanks, NOSAMS Intern, 2011-2012  
Brittany Kruger, LLO/UMinn,, NOSAMS Intern, 2010-2011  
Mara Doherty, U Maryland, NOSAMS Intern, 2010-2011  
G. Ian Ball, SIO, NOSAMS Intern, 2009-2010  
Brett Walker, UCSC, NOSAMS Intern, 2009-2010  
Prosper Zigah, LLO/UMinn, NOSAMS Intern, 2009-2010

Branwen Williams, OSU, NOSAMS Intern, 2007-8  
Juzhi Hou, Brown, NOSAMS Intern, 2007-8  
Andrew Wozniak, VIMS, NOSAMS Intern, 2006-7  
Helen White, Chair, doctoral thesis defense, MIT/WHOI Joint Program 2005  
Fabian Batista, Minority Summer Student Fellow/WHOI, Summer 2003.  
Anne-Sophie Kremeur, Guest Student, Spring/Summer 2002.  
Amy Englebrecht, MIT/WHOI Joint Program, Summer/Fall 2001.  
Julia Parsons, MIT/UROP Program, Summer 2000.  
Robert Ziemian, MIT/UROP Program, Summer 1999.  
Emily Chen, MIT/UROP Program, Summer 1996.  
Sarah O'Connor, MIT/UROP Program, Summer 1994  
Annette Guy, MIT/UROP Program, Summer 1992.  
Julian Sachs, MIT/WHOI Joint Program, Winter 1991.  
Henrietta Edmonds, MIT/WHOI Joint Program, Summer 1991.  
Catherine Lukancic, MIT/UROP Program, Summer 1991.

#### Post-doctoral Supervision

Angela Dickinson, Postdoctoral Scholar/Investigator  
Sunita Shah Walter, Postdoctoral Scholar/Investigator  
Guillaume Soulet, Postdoctoral Scholar/Investigator  
Prosper Zigah, Postdoctoral Scholar/Investigator  
Laurel Childress, Postdoctoral Scholar/Investigator

Numerous Tours of AMS Laboratory to classes, groups & individuals visiting WHOI.  
Speaker for Lawrence Middle School's Women in Science Program, March 1992.  
Volunteer in Falmouth Public Schools, math and science enrichment.  
STEM Ambassador, Massachusetts DIGITS Program  
Repeat participant, National Fossil Day, Oak Bluffs Library, MA

#### **Field Experience:**

2003-present	Coordinate collection of CLIVAR Repeat Hydrography $^{14}\text{C}/^{13}\text{C}$ samples
Summer 2013	Field sampling, Coast Guard Beach, National Seashore
1989-present	Coordinate and participation in numerous cruises to Buzzards Bay, MA to collect water samples.
1988	Coordinated and participated in cruises to Boston Harbor to collect sediment samples.
1982-1986	Chief and assistant scientist on numerous cruises to collect sediment samples in Buzzards Bay aboard WHOI's R/V <i>Asterias</i> .
Summer, 1980	Participated in organic geochemistry cruise from Bermuda to Woods Hole aboard R/V <i>Oceanus</i> . Assisted in hydrographic sampling for carotenoid and amino acid research. Sectioned cores for light hydrocarbon studies.

#### **WHOI Committees:**

Women's Committee, (1989 - 1992)  
Benefits Advisory Committee (1991 - 1992)  
Geology & Geophysics Safety Committee (Chair, 1993 to 2000)  
Institution Safety Committee (1995 to 2000)  
Ad Hoc Department Chair Search Committee (1999)  
MIT/WHOI Joint Program Alumni Committee, Secretary (1997-2001)  
Ad Hoc Safety Committee (2001)  
Ad Hoc NOSAMS Director Search Committee (2003-4)  
Staff Committee (2006-2008)  
Ad Hoc Department Chair Search Committee (2007)  
Technical Staff Committee, founder, chair (2013-2019)  
Blueprint Steering Committee (2014)  
Strategic Facilities Steering Committee (2015)  
Human Resources Director Search Committee (2015)

Ad Hoc promotion committee for Senior Research Specialist candidate (2015)  
Technical Staff Evaluation Committee (2016-2019)

**Peer - Reviewed Publications:**

- Hunt, J.M. and McNichol, A.P., 1984. The Cretaceous Austin Chalk of South Texas--A petroleum source rock. *In: Petroleum Geochemistry and Source Rock Potential of Carbonate Rocks*, J.G. Palacas, (ed.), *AAPG Studies in Geology* #18, 117-125.
- McNichol, A.P., Lee, C. and Druffel, E.R.M., 1988. Carbon cycling in coastal sediments: 1. A quantitative estimate of the remineralization of organic carbon in the sediments of Buzzards Bay, MA: *Geochimica et Cosmochimica Acta*, 52:1531-1543.
- Jones, G.A., McNichol, A.P., von Reden, K.F. and Schneider, R.J., 1990. The National Ocean Sciences AMS facility at Woods Hole Oceanographic Institution: *Nuclear Instruments and Methods in Physics Research*, B52:278-284.
- McNichol, A.P., Druffel, E.R.M. and Lee, C. 1991. Carbon cycling in coastal sediments: 2. An investigation of the sources of  $\Sigma\text{CO}_2$  to pore water using carbon isotopes: *In: Organic Substances and Sediments in Water. Processes and Analytical*, Baker, R.A. (ed.), CRC Press, Boca Raton, FL, Vol. 2:249-272. WHOI Contribution No. 7413.
- Chin, Y.-P., McNichol, A.P. and Gschwend, P.M. 1991. Quantification and characterization of porewater organic colloids: *In: Organic Substances and Sediments in Water. Processes and Analytical*, Baker, R.A. (ed.), CRC Press, Boca Raton, FL, Vol. 2:107-126.
- Rowe, G.T. and McNichol, A.P., 1991. Carbon cycling in coastal sediments, 2. Estimating remineralization in Buzzards Bay, MA -- A comment: *Geochimica et Cosmochimica*, 55, 2989-2991.
- McNichol, A.P., Gagnon, A.R., Jones, G.A. and Osborne, E.A., 1992. Illumination of a black box: Gas composition changes during graphite target preparation for AMS: (Proceedings of the 14th International Radiocarbon Conference, 1991), *Radiocarbon*, 34:321-329.
- von Reden, K.F., Jones, G.A., Schneider, R.J., McNichol, A.P., Cohen, G.J. and Purser, K.H., 1992. The new National Ocean Sciences Accelerator Mass Spectrometer Facility at Woods Hole Oceanographic Institution - Progress and first results: (Proceedings of the 14<sup>th</sup> International Radiocarbon Conference, 1991), *Radiocarbon*, 34:476-481.
- McNichol, A.P. and Druffel, E.R.M., 1992. Variability of the  $\delta^{13}\text{C}$  of dissolved inorganic carbon at a site in the North Pacific Ocean: *Geochimica et Cosmochimica Acta*, 56:3589-3592.
- McNichol, A.P., Osborne, E.A., Gagnon, A.R., Fry, B. and Jones, G.A., 1994. TIC, TOC, DIC, DOC, PIC, POC - Unique aspects in the preparation of oceanographic samples for  $^{14}\text{C}$ -AMS: *Nuclear Instruments and Methods in Physics Research*, B92:162-165.
- Osborne, E.A., McNichol, A.P., Gagnon, A.R., Hutton D.L. and Jones, G.A., 1994. Internal and external checks in the NOSAMS Sample Preparation Laboratory for target quality and homogeneity: *Nuclear Instruments and Methods in Physics Research*, B92:158-161
- Klinedinst, D.B., McNichol, A.P., Currie, L.A., Schneider, R.J., Klouda, G.A., von Reden, K.F., Verkouteren R.M. and Jones, G.A., 1994. Comparative study of AMS target performance using the

- NOSAMS recombinator ion source: *Nuclear Instruments and Methods in Physics Research*, B92:166-171
- Schneider, R.J., Jones, G.A., McNichol, A.P., von Reden, K.F., Elder, K.A., Huang, K. and Kessel, E.D., 1994. Methods for data screening, flagging, and error analysis at the National Ocean Sciences AMS Facility: *Nuclear Instruments and Methods in Physics Research*, B92:172-175
- Jones, G.A., Gagnon, A.R., Schneider, R.J., von Reden, K.F. and McNichol, A.P., 1994. High-precision AMS radiocarbon measurements of central Arctic Ocean seawaters. *Nuclear Instruments and Methods in Physics Research*, B92:426-430.
- Cohen, G.J., Hutton, D.L., von Reden, K.F., Osborne, E.A., McNichol, A.P. and Jones, G.A., 1994. Automated sample processing at the National Ocean Sciences AMS Facility. *Nuclear Instruments and Methods in Physics Research*, B92:129-133.
- McNichol, A.P., Jones, G.A., Hutton, D.L. Gagnon, A.R. and Key, R.M., 1994. The rapid preparation of seawater  $\Sigma\text{CO}_2$  for radiocarbon analysis at the National Ocean Sciences AMS Facility. *Radiocarbon*, 36(2):273-246.
- McNichol, A.P., Gagnon, A.R., Osborne, E.A., Hutton, D.L., von Reden, K.F. and Schneider, R.J., 1995. Improvements in procedural blanks at NOSAMS: Reflections of improvements in sample preparation and accelerator operation. *Radiocarbon*, 37(3):683-691.
- Schneider, R.J., McNichol, A.P., Nadeau, M.J. and von Reden, K.F., 1995. Measurements of the Ox-II/Ox-I ratio as a quality control parameter at NOSAMS. *Radiocarbon*, 37(3):693-696.
- Eglinton, T.I., Aluwihare, L.I., Bauer, J.E., Druffel, E.R.M., McNichol, A.P., 1996. Gas chromatographic isolation of individual compounds from complex matrices for radiocarbon dating. *Analytical Chemistry*, 68:904-912.
- Key, R.M., P.D. Quay, G.A. Jones, A.P. McNichol, K.F. von Reden and R.J. Schneider, 1996. WOCE AMS Radiocarbon I: Pacific Ocean Results (P6, P16 and P17). In:  *$^{14}\text{C}$  Cycling and the Oceans (in Tribute to Reidar Nydal)*, J. W. Beck, E.R.M. Druffel and A.P. McNichol (eds.), *Radiocarbon*, 38(3), 425-518.
- Beck, J.W., E.R.M. Druffel and A.P. McNichol, guest editors, 1996.  *$^{14}\text{C}$  Cycling and the Oceans (In Tribute to Reidar Nydal)*. *Radiocarbon*, 38(3), 643 pp.
- Tanner, R.L., Zielinska, B., Uberna, E., Harshfield, G., and McNichol, A.P., 1996. Concentrations of carbonyl compounds and the carbon isotope of formaldehyde at a coastal site in Nova Scotia during the Nare summer intensive. *Journal of Geophysical Research*, 101, 28961-28970 .
- Von Reden, K.F., A.P. McNichol, J.C. Peden, K.L. Elder, A.R. Gagnon and R.J. Schneider, 1997. AMS measurements of the  $^{14}\text{C}$  distribution in the Pacific Ocean. In: *Proceedings of the Seventh International Conference on Accelerator Mass Spectrometry*, A.J.T. Jull, J.W. Beck, and G.S. Burr (eds.), Tucson, AZ, 20-24 May 1996, *Nuclear instruments and Methods in Physics Research*, B123:438-442.
- Gagnon, A.R., A.P. McNichol, D.L. Hutton, E.A. Osborne and J.C. Donoghue, 1996. Automated systems and techniques utilized at the NOSAMS sample preparation laboratory: An update of productivity and quality issues. *Radiocarbon*, 38(1):38-39.

- Eglinton, T. I., B.C. Benitez-Nelson, A. Pearson, A.P. McNichol, J.E. Bauer, and E.R.M. Druffel, 1997. Variability in radiocarbon ages of individual organic compounds from marine sediments. *Science*, **277**, 796-799.
- Schlosser, P., B. Kromer, B. Ekwurzel, G. Bönisch, A. McNichol, R. Schneider, K. von Reden, H. Östlund, and J. Swift, 1997. The First Trans-Arctic  $^{14}\text{C}$  Section: Comparison of the mean ages of the deep waters in the Eurasian and Canadian Basins of the Arctic Ocean, in *Proceedings of the 7<sup>th</sup> International Conference on Accelerator Mass Spectrometry*, Tucson, AZ, May 1996, *Nuclear Instruments and Methods B123*:431-437.
- Pearson, A., A.P. McNichol, R.J. Schneider, K.F. von Reden, and Y. Zheng, 1998. Microscale AMS  $^{14}\text{C}$  measurements at NOSAMS: (Proceedings of the 16th International Radiocarbon Conference, 1997), *Radiocarbon*, 40:61-75.
- Schneider, R.J., Hayes, J.M., von Reden, K.F., McNichol, A.P., Eglinton, T., 1997. Target preparation for continuous flow accelerator mass spectrometry: (Proceedings of the 16th International Radiocarbon Conference, 1997), *Radiocarbon*, 40:95-102.
- Elder, K.L., McNichol, A.P., Gagnon, A.R., 1997. Evaluating reproducibility of seawater, inorganic and organic carbon  $^{14}\text{C}$  results at the National Ocean Sciences AMS Facility (NOSAMS: (Proceedings of the 16th International Radiocarbon Conference, 1997), *Radiocarbon*, 40:223-230.
- von Reden, K.F., McNichol, A., Pearson, A., and Schneider, R. 1997, AMS Measurement of Small Samples with a High-Current System: (Proceedings of the 16th International Radiocarbon Conference, 1997), *Radiocarbon*, 40:247-253.
- Sonnerup R.E., P.D. Quay, A.P. McNichol, J.L. Bullister, T.A. Westby and H.L. Anderson (1999) Reconstructing the oceanic  $^{13}\text{C}$  Suess effect. *Global Biogeochemical Cycles* 13, 857-872.
- Martin W.R., A.P. McNichol, and D.C. McCorkle (2000) The radiocarbon age of calcite dissolving at the sea floor: Estimates from pore water data. *Geochim.Cosmochim. Acta* 64, 1391-1404.
- Sonnerup R.E., P.D. Quay, A.P. McNichol (2000) The Indian Ocean  $^{13}\text{C}$  Suess effect. *Global Biogeochemical Cycles* 14, 903-916.
- McNichol A.P., J.R. Ertel and T.I Eglinton (2000) The radiocarbon content of individual lignin-derived phenols—Technique and initial results. *Radiocarbon* 42, 219-227.
- McNichol A.P., R.J. Schneider, K.F. von Reden, A.R. Gagnon, K.L. Elder, NOSAMS, R.M. Key and P.D. Quay (2000) Ten Years After—The WOCE AMS Radiocarbon Program. *Nucl. Instr. And Meth. In Phys. B* 172, 479-484.
- Pearson A., T.I. Eglinton and A.P. McNichol (2000) An organic tracer for surface ocean radiocarbon. *Paleoceanography* 15. 541-550.
- Lerperger M., A.P. McNichol, J. Peden, A.R. Gagnon, K.L. Elder, W. Kutschera, W. Rom and P. Steier (2000) Oceanic uptake of  $\text{CO}_2$  re-estimated through  $\text{d}^{13}\text{C}$  in WOCE samples. *Nucl. Instr. And Meth. In Phys. B* 172, 501-512.
- Gagnon A.R., A.P. McNichol, J.C. Donoghue, D.R. Stuart and NOSAMS (2000) The NOSAMS sample preparation laboratory in the next millennium: Progress after the WOCE program. *Nucl. Instr. And Meth. In Phys. B* 172, 409-415.

- Currie L.A., J.D. Kessler, J.V. Marolf, A.P. McNichol, D.R. Stuart and J.C. Donoghue (2000) Low-level (submicromole) environmental  $^{14}\text{C}$  metrology. Nucl. Instr. And Meth. In Phys. B 172. 440-448.
- Martens C.S. and A.P. McNichol (2001) Radiocarbon dating of wood samples and plutonium sediment disturbance studies at the *Queen Anne's Revenge* wreck site. Southeastern Geology 40, 29-40.
- Pearson A., A.P. McNichol, B.C. Benitez-Nelson, J.M. Hayes and T.I. Eglinton (2001) Origin of lipid biomarkers in Santa Monica Basin surface sediment: A case study using compound-specific D14C analysis. Geochim.Cosmochim.Acta 65, 3123-3137.
- McNichol A.P., A.J.T. Jull and G.S. Burr (2001) Converting AMS data to radiocarbon values: Considerations and conventions. Radiocarbon 43, 313-320.
- Key R.M., P.D. Quay, P. Schlosser, A.P. McNichol, K.F. von Reden, R.J. Schneider, K.L. Elder, M. Stuiver and H. Gote Ostlund (in press) WOCE Radiocarbon IV: Pacific Ocean Results; P10, P13N, P14C, P18, P19 & S4P. Radiocarbon.
- Zheng Y., R.F. Anderson, P.N. Froelich, W. Beck, A.P. McNichol and T. Guilderson (2002) Challenges in radiocarbon dating organic carbon in opal-rich marine sediments. Radiocarbon 44, 123-136.
- Reddy C.M., A. Pearson, L. Xu, A.P. McNichol, B. Benner, A. Wise, G. Klouda, L.A. Currie and T.I. Eglinton (2002) Radiocarbon as a tool to apportion the sources of polycyclic aromatic hydrocarbons and black carbon in environmental samples. Env. Sci. and Tech. 36, 1774-1782.
- Quay P.D., R. Sonnerup, T. Westby, J. Stutsman and A.P. McNichol (2003) Changes of the  $^{13}\text{C}/^{12}\text{C}$  of dissolved inorganic carbon in the ocean as a tracer of anthropogenic  $\text{CO}_2$  uptake. Global Biogeochemical Cycles 17.
- Tanner R.L., W.J. Parker and A.P. McNichol (2004) Fossil Sources of Ambient Aerosol Carbon based on  $^{14}\text{C}$  Measurements. Aerosol Science and Technology 38. 133-139.
- Lewis C.W., Volckens J., Braddock J.N., Crews W.S., Lonneman W.A. and McNichol A.P. (2006) Absence of  $^{14}\text{C}$  in  $\text{PM}_{2.5}$  Emissions from gasohol combustion in small engines. Aerosol Science and Technology 40, 657-663.
- Wakeham S.G., A.P. McNichol, J.E. Kostka and T.K. Pease (2006) Natural-abundance radiocarbon as a tracer of assimilation of petroleum carbon by bacteria in salt marsh sediments. Geochim.Cosmochim.Acta, 70(7). 1761-1771.
- Sonnerup R. E., McNichol A. P., Quay P. D., Gammon R. H., Bullister J. L., Sabine C. L., and Slater R. D. (2007) Anthropogenic delta C-13 changes in the North Pacific Ocean reconstructed using a multiparameter mixing approach (MIX). *Tellus Series B-Chemical and Physical Meteorology* 59(2), 303-317.
- McNichol A.P.** and Aluwihare L. (2007) The power of radiocarbon in biogeochemical studies of the marine carbon cycle: Insights from studies of dissolved and particulate organic carbon (DOC and POC). Chemical Reviews 107, 443-466.
- Zencak Z., Reddy C.M., Teuten E.L., Xu L., McNichol A.P. and Gustafsson O. (2007) Evaluation of gas chromatographic isotope fractionation and process contamination by carbon in compound specific radiocarbon analysis. Anal. Chem. 79, 2042-2049.

- Bennett M. Volkens J., Stanglmaier R., McNichol A.P., Ellenson W.D., Lewis C.W. (2008) Biodiesel effects on particulate radiocarbon ( $^{14}\text{C}$ ) emissions from a diesel engine. *J. of Aerosol Science* 39, 667-678.
- Shen H., A.P. McNichol, L. Xu, A. Gagnon and B.G. Heickes (2009) Radiocarbon analysis of atmospheric formaldehyde using cystamine derivatization. *Anal. Chem.* 81, 6310-6316.
- Peacock E.E., Arey, J.S., DeMello J.A., McNichol A.P., Nelson R.K., and Reddy C.M. (2010) Molecular and isotopic analysis of motor oil from a biodiesel –driven vehicle. *Energy and Fuels* 24, 1037-1042.
- Shen, H., B.G. Heikes, J.T. Merrill, A.P. McNichol and L. Xu (2010) Coastal New England pilot study to determine fossil and biogenic formaldehyde source contributions using radiocarbon. *JGR Atmospheres* 115.
- Jenkins W.J., K.L. Elder, A.P. McNichol and K. von Reden (2010) The passage of the bomb radiocarbon pulse into the Pacific Ocean. *Radiocarbon* 52, p1182-1190.
- McIntyre C.P., E. Galutschek, M.L. Roberts, K.F. von Reden, A.P. McNichol, and W.J. Jenkins (2010) A continuous-flow gas chromatography  $^{14}\text{C}$  accelerator mass spectrometry system. *Radiocarbon* 52, p. 295-300.
- Patrut A., D.H. Mayne, K.F. von Reden, D.A. Lowy, R. van Pelt, A.P. McNichol, M.L. Roberts and D. Margineanu (2010) Fire history of a giant African baobab evinced by radiocarbon dating. *Radiocarbon* 52, p. 717-726.
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- Burke, A., Robinson, L. F., McNichol, A. P., Jenkins, W. J., Scanlon, K. M., and Gerlach, D. S., 2010 Reconnaissance dating A new radiocarbon method applied to assessing the temporal distribution of Southern Ocean deep-sea corals. *Deep-Sea Research Part I-Oceanographic Research Papers* 57, 1510-1520.
- Griffith D.R., **A.P. McNichol**, L. Xu, F.A. McLaughlin, R.W. MacDonald, K.A. Brown and T.I. Eglinton (2012) Carbon dynamics in the western Arctic Ocean: Insights from full-depth carbon profiles of DIC, DOC, and POC. *Biogeosciences* 9, p. 1217-1224. DOI: 10.5194/bg-9-1217-1224
- Ball G.I., L. Xu, A.P. McNichol and L.I. Aluwihare (2012) A two-dimensional, heart-cutting preparative gas chromatograph facilitates highly resolved single compound isolations with utility toward compound-specific natural abundance radiocarbon analyses. *Journ. Of Chrom. A.* 1220, p. 122-131.
- Hou, J.Z., Huang, Y.S., Brodsky, C., Alexandre, M.R., McNichol, A.P., King, J.W., Hu, F.S., Shen, J., 2010. Radiocarbon Dating of Individual Lignin Phenols: A New Approach for Establishing Chronology of Late Quaternary Lake Sediments. *Analytical Chemistry* 82, 7119-7126.
- McIntyre, C. P., M. L. Roberts, J. R. Burton, A. P. McNichol, A. Burke, L. F. Robinson, K. F. von Reden, and W. J. Jenkins (2011), Rapid radiocarbon ( $^{14}\text{C}$ ) analysis of coral and carbonate sample using a



- continuous-flow accelerator mass spectrometry (CFAMS) system, *Paleoceanography*, 26, PA4212, doi:10.1029/2011PA002174.
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