

CURRICULUM VITAE

ROBERT K. NELSON

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Education:

B.A., Biology: Central Connecticut State University, New Britain, CT., 1980

*additional course work in Organic Chemistry at the University of Massachusetts-Dartmouth, Dartmouth, Massachusetts, 1992

*additional course work in Physical Chemistry at Northeastern University, Boston, Massachusetts, 1992-1993.

Professional Experience:

Adjunct Researcher, Curtin University (Perth, Western Australia)
Western Australia - Organic and Isotope Geochemistry Centre 8/15-Present

Facilities Manager - WHOI - Organic Geochemistry Analysis Laboratory - GC×GC Facility
Facility web site: <http://www.whoi.edu/website/gcxgc/home>
Department of Marine Chemistry & Geochemistry 2/15-Present

Research Specialist, Woods Hole Oceanographic Institution,
Department of Marine Chemistry & Geochemistry 6/06-Present

Research Associate III, Woods Hole Oceanographic Institution,
Department of Marine Chemistry & Geochemistry 4/98-6/06

Research Associate, Woods Hole Oceanographic Institution,
Department of Marine Chemistry & Geochemistry 4/94-4/98

Senior Research Assistant I, Woods Hole Oceanographic Institution,
Department of Marine Chemistry & Geochemistry 1/91-4/94

Research Assistant III, Woods Hole Oceanographic Institution,
Department of Marine Chemistry & Geochemistry 3/87-12/90

Research Assistant III, University of Connecticut Health Center,
Department of Pathology 7/83-9/86

Research Assistant II, University of Connecticut Health Center,
Department of Biochemistry 4/81-6/83

Research Interests:

- Interested in studying the source, transport, and ultimate fate of petroleum hydrocarbons and other man-made contaminants in the environment.
- Petroleum biomarkers as oil spill fingerprinting tools.
- Petroleum biomarkers as indicators of ancient sedimentary depositional environments.
- Biofuels.

Research Specialties:

Very high resolution chromatographic techniques such as comprehensive two-dimensional gas chromatography (GC×GC) coupled with time of flight mass spectrometry (GC×GC-ToF-MS) or flame ionization detection (GC×GC-FID).

United States Patents:

- 2010 United States Patent #7805979 – Application #EP20070854268, Publication #EP2084525 B1 (also published as CA2667523A1, CA2667523C, CN101680862A, DE602007006229D1, EP2084525A2, US7805979, US20080105032, WO2008051900A2, WO2008051900A3) - **High accuracy contamination estimation in hydrocarbon samples using GC×GC**. Inventors – Oliver C Mullins, Robert K. Nelson, Bhavani Raghuraman, Christopher Michael Reddy. Patent application filed October 22, 2007 – publication date April 28, 2010.
- 2014 United States Patent - Application #US 13/437,759, Publication #US20130060477 A1 (also published as WO2012135858A2 and WO2012135858A3) – **Systems and methods for topographic analysis**. Inventors - Ananya Sen Gupta, Christopher M. Reddy, Robert Nelson. Patent application filed April 2, 2012 – publication date March 7, 2013.

Awards & Honors:

- 2015 **Al Vine Senior Technical Staff Award**. The Vine award is named for former WHOI physical oceanographer and visionary Allyn Vine, for whom the deep submersible ALVIN is named. Vine was widely recognized as a leading proponent for manned exploration of the deep sea, and championed construction of other tools for the oceanographic community, often producing new techniques and unusual equipment. The Vine award is given in recognition of achievement and technical excellence and provides \$50,000.00 for salary support.
<http://www.whoi.edu/DoR/internal-funding/research-staff-awards/senior-technical-staff-awards>
- 2014 **Penzance Award**. Fye Lab Senior Technical Staff. An award given to a group "for sustained exceptional performance, for outstanding representation of the WHOI spirit, and for major contributions to the personal and professional lives of our staff."
- 2013 Spring ENFL **R.A. Glenn Award** for presentation and preprint titled "Sulfur group type response to an Oxidative Desulfurization Treatment". This award, for the most innovative and interesting paper presented at each ACS national meeting, was established in 1956, by the Division of Fuel Chemistry, in cooperation with Bituminous Coal Research, Inc. In 1972, the award was named in honor of Richard A. Glenn, who served as Assistant Director of Research at Bituminous Coal Research, Inc. and as Chairman of the Fuel Chemistry Division in 1960. Symposia chairs nominate up to two (2) papers from their sessions which they judge to be the most innovative and interesting original new work (not overviews). A selection committee then reviews all the nominated papers and attends the presentations. Based on the oral presentation, technical excellence, and the quality of the preprint, the committee selects the paper to receive the R.A. Glenn Award.

- 2008 Invited Talk. **Gordon Research Conference – Organic Geochemistry.** *Comprehensive two-dimensional gas chromatographic analysis (GC×GC) of bicadiinanes in crude oil – a comparison of oils from the Ardjuna basin, northwest Java; the Seria oil field, Brunei; and two oils from south Texas, USA.* August 7, 2008 Holderness School, Plymouth, New Hampshire, USA.
- 2007 **John B. Phillips Award.** In honor of the inventor of comprehensive two-dimensional gas chromatography (GC×GC). This award is chosen by an international committee composed of GC×GC specialists and given to the authors of a manuscript judged to have the highest potential impact on the future of GC×GC science.
- 2005 Comprehensive Two-dimensional Gas Chromatogram featured on the cover of ACS journal **Analytical Chemistry** (November 15, 2005).
- 2002 **Robert R. Whelan Award.** Award used to travel to the 2002 AGU Ocean Sciences Meeting to present a talk entitled: Characterization of Thiols in Seawater by Electrospray Mass Spectrometry of Monobromobimane Derivatives.
- 1994 **Robert R. Whelan Award.** Co-recipient of the first Marine Chemistry & Geochemistry Robert R. Whelan Award, to subsidize attendance at a basic concepts and techniques in nuclear magnetic resonance course offered at Bruker Instruments Inc.

Review Experience:

Meetings

- 2014 International Oil Spill Conference (IOSC) Abstract Review Committee

Journals

- Organic Geochemistry
- Journal of Chromatography A
- Energy & Fuels

Research Proposals

- The Research Council of Norway

Teaching Experience:

Co-instructor of an internet based course; “*GC×GC Systems, Informatics, and Applications; An Advanced Seminar On Comprehensive Two-dimensional Gas Chromatography.*” (Spring semester 2006 & Spring semester 2007). Teaching colleagues included John V. Seeley, Oakland University; John Dimandja, Spelman College; Stephen E. Reichenbach, University of Nebraska; and Chris M. Reddy, Woods Hole Oceanographic Institution.

Individual GC×GC training and collaborative research

- Dr. Robert Haddad ENTRIX, Inc. 2004.
- Dr. J. Sam Arey Post-doctoral investigator 2004-2005.
- George Wardlaw Graduate Student - UCSB 2006-2009.
- Dr. G. Todd Ventura Post-doctoral investigator 2006-2008.
- Florence Schubotz Graduate Student - Universität Bremen MARUM 2007-2009.
- Desiree Plata WHOI/MIT joint program student – defended April 2009.

- Kristin Pangallo WHOI/MIT joint program student – defended July 2009.
- Christiane Eiserbeck Graduate Student – Curtin University of Technology 2009.
- Natalie Rosenfelder Graduate Student - Universität Hohenheim 2009.
- Molly Redmond Graduate Student - UCSB 2007.
- Dr. Un Hyuk Yim Korean Ocean Research and Development Institute (KORDI) 2009-2012.
- Karin Lemkau WHOI/MIT joint program student 2009-2012.
- Alexandra Tcaciuc WHOI/MIT joint program student 2009-2014.
- Dr. Carlos Guitart Guest Investigator 2009-2010.
- Dr. Christoph Aeppli Post-doctoral investigator 2011-2013.
- Taught 3 day GC×GC workshop at the Korean Coast Guard Research Institute – Oil Spill Laboratory, Incheon, South Korea, March 2012.
- Jonas Gros Graduate Student - École Polytechnique Fédérale de Lausanne 2012-present.
- Jagos Radovic Graduate Student – Institute of Environmental Assessment and Water Research, CSIC (Spanish Council for Scientific Research) 2012.
- Taught 3 day GC×GC workshop at the National High Magnetic Field laboratory – Future Fuels Institute, at Florida State University, Tallahassee, Florida, August 2012.
- 2 week GC×GC workshop at WHOI for Priscila Lalli and Jackie Jarvis from the National High Magnetic Field Laboratory at Florida State University, April 2013.
- Ferdinand Oberle Graduate Student from USGS.
- Jeremiah Forythe PhD. Researcher at Schlumberger.
- Hector Koolen Graduate Student from the University of Campinas.
- Robert Swarthout Post Doctoral Fellow from the University of New Hampshire.
- Dr. Greg O’Neil Associate Professor of Organic Chemistry at Western Washington University.
- Andre Henrique Graduate Student from University of Fortaleza.

Publications:

- Frew, N.M., and R.K. Nelson (1992). Isolation of Marine Microlayer Film Surfactants for ex Situ Study of Their Surface Physical and Chemical Properties, *Journal of Geophysical Research* **97**, 5281-5290.
- Frew, N.M., and R.K. Nelson (1992). Scaling of Marine Microlayer Film Surface Pressure-Area Isotherms Using Chemical Attributes, *Journal of Geophysical Research* **97**, 5291-5300.
- Frysinger, G.S., W.E. Asher, G.M. Korenowski, W.R. Barger, M.A. Klusky, N.M. Frew, and R.K. Nelson (1992). Study of Ocean Slicks by Non-Linear Laser Processes, Part I: Second Harmonic Generation, *Journal of Geophysical Research* **97**, 5253-52.
- Bock, E.J., J.B. Edson, N.M. Frew, A. Karachintsev, W.R. McGillis, R.K. Nelson, K. Hansen, T. Hara, M.Uz, B. Jähne, J. Dieter, J. Klinke, and H. Haußecker (1995). Description of the science plan for the April 1995 CoOp experiment, ‘Gas transfer in coastal waters, performed from the research vessel New Horizon. In: B. Jähne and E.C. Monahan (Eds.), *Air-Water Gas Transfer Selected Papers for the Third International Symposium on Air-Water Gas Transfer*, AEON Verlag and Studio, 801-810.
- DeGrandpre, M.D., A. Vodacek, R.K. Nelson, E.J. Bruce, and N.V. Blough (1996). Seasonal Seawater Optical Properties of the US Middle Atlantic Bight. *Journal of Geophysical Research* **101** (C10), 22,727-22,736.

- Vodacek, A., Blough, N.V., DeGrandpre, M.D., Peltzer, E.T., Nelson R.K., (1997). Seasonal variation of CDOM and DOC in the middle Atlantic Bight: Terrestrial inputs and photooxidation. *Limnology & Oceanography* **42** (4), 674-686.
- Frew, N.M., and Nelson R.K., (1999). Spatial Mapping Of Sea Surface Microlayer Surfactant Concentration And Composition. *IEEE International Geoscience And Remote Sensing Symposium*, June 1999, Hamburg, Germany, pp. 1472-1474.
- McGillis, W. R., Dacey, J. W. H., Frew, N. M., Bock, E. J., and Nelson R.K., (2000). Water-Air Flux of Dimethylsulfide. *Journal of Geophysical Research Letters* **105** (C1), 1187-1193.
- Xu, L., Reddy, C.M., Farrington, J.W., Frysinger, G.S., Gaines, R.B., Johnson, C.G., Nelson, R.K., and Eglinton, T.I., (2001). Identification of a Novel Alkenone in Black Sea Sediments. *Organic Geochemistry* **32** (5) 633-645.
- Bock, E.J., Edson, J.B., Frew, N.M., Hara, T., Haussecker, H., Jaehne, B., McGillis, W.R., McKenna, S.P., Nelson, R.K., Schimpf, U., and Uz, M., (2002). Overview of the CoOP experiments: physical and chemical measurements parameterizing air-sea gas exchange. In: *Gas Transfer at Water Surfaces*, M.A. Donelan, E.S. Saltzman, R. Wanninkhof, and W.M. Drennan (eds.), *Geophysical Monograph Series* **127**, AGU Press, 39-44.
- Frew, N.M., Nelson, R.K., McGillis, W.R., Edson, J.B., Bock, E.J., and Hara, T. (2002). Spatial variations in surface microlayer surfactants and their role in modulating air-sea exchange. In: *Gas Transfer at Water Surfaces*, M.A. Donelan, E.S. Saltzman, R. Wanninkhof, and W.M. Drennan (eds.), *Geophysical Monograph Series* **127**, AGU Press, 153-159.
- Johnson, C.G., Frysinger, G.S., Nelson, R.K., Gaines, R.B., Ohkouchi, N., Reddy, C.M., and Eglinton, T.I., (2003). Innovative methods for determining alkenone unsaturation ratios. *Marine Chemistry* **83**, 5-22.
- Dupont, C.L., Nelson, R.K., Bashir, S., Moffett, J.W., Ahner, B.A., (2004). Novel copper-binding and nitrogen-rich thiols produced and exuded by *Emiliania huxleyi*. *Limnology & Oceanography* **49** (5), 1754-1762.
- Reddy, C.M., Xu, L., O'Neil, G.W., Nelson, R.K., Eglinton, T.I., Faulkner, D.J., Norstrom, R., Ross, P.S., Tittlemier, S.A., (2004). Radiocarbon evidence for a naturally-produced, bioaccumulating halogenated organic compound. *Environmental Science & Technology* **38**, 1992-1997.
- Peacock, E.E., Nelson, R.K., Solow, A.R., Warren, J.D., Baker, J.L., and Reddy, C.M., (2005). The West Falmouth oil spill: 100 kg of oil persists in marsh sediments. *Environmental Forensics* **6**, 273-281.
- Arey, J. S., Nelson, R. K., Xu, L., and Reddy, C. M., (2005). Estimating partitioning properties for a complete set of diesel fuel hydrocarbons using comprehensive two-dimensional gas chromatography retention indices. *Analytical Chemistry* **77** (22), 7172-7182.
- Nelson, R.K., Kile, B.S., Plata, D.L., Sylva, S.P., Xu, L., Reddy, C.M. Gaines, R.B., Frysinger, G.S., and Reichenbach, S.E., (2006). Tracking the Weathering of an Oil Spill with Comprehensive Two-Dimensional Gas Chromatography. *Environmental Forensics* **7**, 33-44.

- Slater, G.F., Nelson, R.K., Kile, B.K., and Reddy, C.M., (2006). Intrinsic Bacterial Biodegradation of Petroleum Contamination Demonstrated *in situ* Using Natural Abundance, Molecular-level ^{14}C Analysis. *Organic Geochemistry* **37** (9), 981-989.
- Hill, T.M., Kennett, J.P., Valentine, D.L., Yang, Z., Reddy, C.M., Nelson, R.K., Behl, R.J., Robert, C., and Beaufort, L., (2006). Climatically Driven Emissions of Hydrocarbons from Marine Sediments During Deglaciation. *Proceedings of the National Academy of Sciences of the United States of America* **103** (37), 13570-13574.
- Peacock, E.E., Hampson, G.R., Nelson, R.K., Xu, L., Frysinger, G.S., Gaines, R.B., Farrington, J.W., Tripp, B.W., and Reddy, C.M., (2007). The 1974 Spill of the Bouchard 65 Oil Barge: Petroleum Hydrocarbons Persist in Winsor Cove Salt Marsh Sediments. *Marine Pollution Bulletin* **54** (2), 214-225.
- Reddy, C.M., Nelson, R.K., Sylva, S.P., Xu, L., Peacock, E.E., Raghuraman, B., and Mullins, O.C., (2007). Identification and Quantification of Alkene-based Drilling Fluids in Crude Oils by Comprehensive Two-Dimensional Gas Chromatography with Flame Ionization Detection. *Journal of Chromatography A* **1148** (1), 100-107.
- DeMello, J.A., Carmichael, C.A., Peacock, E.E., Nelson, R.K., Arey, J.S., and Reddy, C.M., (2007). Biodegradation and Environmental Behavior of Biodiesel Mixtures in the Sea: An Initial Study. *Marine Pollution Bulletin* **54** (7), 894-904.
- Arey, J.S., Nelson, R.K., Reddy, C.M., (2007). Disentangling Oil Weathering Using GC \times GC, Part I. Chromatogram Analysis. *Environmental Science & Technology* **41**(16), 5738-5746.
- Arey, J.S., Nelson, R.K., Reddy, C.M., (2007). Disentangling Oil Weathering Using GC \times GC, Part II. Mass Transfer Calculations. *Environmental Science & Technology* **41** (16), 5738-5746.
- Ventura, G.T., Kenig, F., Reddy, C.M., Schieber, J., Frysinger, G.S., Nelson, R.K., Gaines, R.B., and Schaeffer, P., (2007). Molecular Evidence of Late Archean Archea and the Presence of a Subsurface Hydrothermal Biosphere. *Proceedings of the National Academy of Science of the United States of America* **104** (36), 14260-14265.
- Sylva, S.P., Ball, L., Nelson, R.K., and Reddy, C.M., (2007). Compound Specific $^{81}\text{Br}/^{79}\text{Br}$ Analysis by Capillary Gas Chromatography Multi-Collector Inductively Coupled Plasma Mass Spectrometry (GC-MC-ICPMS). *Rapid Communications in Mass Spectrometry* **21**, 3301-3305.
- Mullins, O.C., Ventura, G.T., Nelson, R.K., Betancourt, S.S., Raghuraman, B., Reddy, C.M. (2008). Visible-near-infrared spectroscopy by downhole fluid analysis coupled with two-dimensional gas chromatography to address oil reservoir complexity. *Energy & Fuels* **22**, 496-503.
- Pagnallo, K., Nelson, R.K., Teuten, E.L., Pedler, B.E., and Reddy, C.M. (2008). Expanding the range of dehalogenated 1'-methyl-1,2'-bipyrroles (MBPs) using GC/ECNI-MS and GC \times GC/TOF-MS. *Chemosphere* **71**, 1557-1565.
- Ventura, G.T., Kenig, F., Reddy, C.M., Frysinger, G.S., Nelson, R.K., Van Mooy, B., and Gaines, R.B. (2008). Resolving the composition and formation of unresolved complex mixtures extracted from

- late Archean metasediments by comprehensive two-dimensional gas chromatography (GC×GC). *Organic Geochemistry* **39**, 846-867.
- Wardlaw, G., Arey, J.S., Reddy, C.M., Nelson, R.K., Ventura, G.T., and Valentine, D.L. (2008). Disentangling oil weathering at a marine seep using GC×GC: Broad metabolic specificity accompanies subsurface petroleum biodegradation. *Environmental Science & Technology* **42** (19), 7166-7173.
- Betancourt, S.S., Ventura, G.T., Pomerantz, A.E., Vilorio, O., Dubost, F.X., Zuo, J., Monson, G., Bustamante, D., Purcell, J.M., Nelson, R.K., Rodgers, R.P., Reddy, C.M., Marshall, A.G., and Mullins, O.C. (2009). Nanoaggregates of asphaltenes in a reservoir crude oil and reservoir connectivity. *Energy & Fuels* **23** (3), 1178-1188.
- Farwell, C., Reddy, C.M., Peacock, E.E., Nelson R.K., Washburn, L., and Valentine, D.L. (2009). Weathering and the fallout plume of heavy oil from strong petroleum seeps near coal oil point, CA. *Environmental Science & Technology* **43** (10), 3542-3548.
- Camilli, R., Bingham, B., Reddy, C.M., Nelson, R.K., and Duryea, N. (2009). Method for rapid localization of seafloor petroleum contamination using concurrent mass spectrometry and acoustic positioning. *Marine Pollution Bulletin* **58** 1505-1513.
- Peacock, E.E., Arey, J.S., De Mello, 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 & Fuels* **24** (2), 1037-1042.
- Valentine, D.L., Reddy, C.M., Farwell, C., Hill, T.M., Pizarro, O., Yoerger, D.R., Camilli, R., Nelson, R.K., Peacock, E.E., Bagby, S.C., Clarke, B.A., Roman, C.N., and Soloway, M. (2010). Asphalt volcanoes as a potential source of methane to late Pleistocene coastal waters. *Nature Geoscience* **3** (5), 345-348.
- Pomerantz, A.E., Ventura, G.T., McKenna, A.M., Canas, J.A., Auman, J., Koerner, K., Curry, D., Nelson R.K., Reddy, C.M., and Rodgers, R.P. (2010). Combining biomarker and bulk compositional gradient analysis to assess reservoir connectivity. *Organic Geochemistry* **41** (8), 812-822.
- Ventura, G.T., Raghuraman, B., Nelson R.K., Mullins, O.C., and Reddy, C.M. (2010). Compound class oil fingerprinting techniques using comprehensive two-dimensional gas chromatography (GC×GC). *Organic Geochemistry* **41** (9), 1026-1035.
- Jensen, B.A., Reddy, C.M., Nelson R.K., and Hahn, M.E. (2010). Developing tools for risk assessment in protected species: Relative potencies inferred from competitive binding of halogenated aromatic hydrocarbons to aryl hydrocarbon receptors from beluga (*Delphinapterus leucas*) and mouse. *Aquatic Toxicology* **100** (3), 238-245.
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- Juyal, P., McKenna, A.M., Yen, A., Rodgers, R.P., Reddy, C.M., Nelson, R.K., Andrews, A.B., Atolia, E., Allenson, S.J., Mullins, O.C., Marshall, A.G., (2011). Analysis and Identification of Biomarkers and Origin of Color in a Bright Blue Crude Oil. *Energy & Fuels* **25** (1), 172-182.
- Ventura, G.T., Hall, G.J., Nelson, R.K., Frysinger, G.S., Raghuraman, B., Pomerantz, A.E., Mullins, O.C., Reddy, C.M., (2011). Analysis of petroleum compositional similarity using multiway principal components analysis (MPCA) with comprehensive two-dimensional gas chromatographic data. *Journal of Chromatography A* **1218** (18), 2584-2592.
- Wardlaw, G.D., Nelson, R.K., Reddy, C.M., Valentine, D.L., (2011). Biodegradation preference for isomers of alkylated naphthalenes and benzothiophenes in marine sediment contaminated with crude oil. *Organic Geochemistry* **42** (6), 630-639.
- Eiserbeck, C., Nelson, R.K., Grice, K., Curiale, J., Reddy, C.M., Raiteri, P., (2011). Separation of 18 α (H)-, 18 β (H)-oleanane and lupane by comprehensive two-dimensional gas chromatography. *Journal of Chromatography A* **1218** (32), 5549-5553.
- Reddy, C.M., Arey, J., Seewald, J.S., Sylva, S.P., Lemkau, K.L., Nelson, R.K., Carmichael, C.A., McIntyre, C.P., Fenwick, J., Ventura, G. T., Van Mooy, B.A.S.; Camilli, R., (2011). Composition and fate of gas and oil released to the water column during the Deepwater Horizon oil spill. *Proceedings of the National Academy of Sciences of the United States of America* **109** (50), 20229-20234.
- Ventura, G.T., Simoneit, B.R.T., Nelson, R.K., Reddy, C.M., (2012). The composition, origin and fate of complex mixtures in the maltene fractions of hydrothermal petroleum assessed by comprehensive two-dimensional gas chromatography. *Organic Geochemistry* **45** (1), 48-65.
- Carmichael, C.A., Arey, J.S. Graham, W.M., Linn, L.J., Lemkau, K.L., Nelson, R.K., Reddy, C.M., (2012). Floating oil-covered debris from Deepwater Horizon: identification and application. *Environmental Research Letters* **7**, 6 pages.
- Tcaciuc, A.P., Nelson, R.K., Reddy, C.M., Gschwend, P.M., (2012). Estimating phospholipid membrane-water partition coefficients using comprehensive two-dimensional gas chromatography. *Environmental Science & Technology* **46**, 3449-3456.
- White, H.K., Hsing, P-Y., Cho, W., Shank, T.M., Cordes, E.E., Quattrini, A.M., Nelson, R.K., Camilli, R., Demopoulos, A.W.J., German, C.R., Brooks, J.M., Roberts, H.H., Shedd, W., Reddy, C.M., Fisher, C.R., (2012). Impact of the Deepwater Horizon oil spill on a deep-water coral community in the Gulf of Mexico. *Proceedings of the National Academy of Sciences of the United States of America* **109** (50), 20303-20308.
- Eiserbeck, C., Nelson, R.K., Grice, K., Curiale, J., Reddy, C.M., (2012). Comparison of GC-MS, GC-MRM-MS, and GC \times GC to characterise higher plant biomarkers in Tertiary oils and rock extracts. *Geochimica et Cosmochimica Acta* **87**, 299-322.
- Aeppli, C., Carmichael, C.A., Nelson, R.K., Lemkau, K.A., Graham, W.M., Redmond, M.C., Valentine, D.L., Reddy, C.M., (2012). Oil Weathering after the Deepwater Horizon Disaster Led to the Formation of Oxygenated Residues. *Environmental Science & Technology* **46**, 8799-8807.
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- Fisher, C.R., (2012). Reply to Boehm and Carragher: Multiple lines of evidence link deep-water coral damage to Deepwater Horizon oil spill. *Proceedings of the National Academy of Sciences of the United States of America*, published ahead of print July, 2012, doi:10.1073/pnas.1210413109 1 page.
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- Aeppli, C., Reddy, C.M., Nelson, R.K., Kellermann, M.Y., Valentine, D.L., (2013). Recurrent Oil Sheens at the Deepwater Horizon Disaster Site Fingerprinted with Synthetic Hydrocarbon Drilling Fluids. *Environmental Science & Technology* **47** (15), 8211-8219.
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59. Schubotz, F., Ventura, G.T., Nelson, R.K., Knittel, K., Wegener, G., Wilhelm, T., Zabel, M., Kasten, S., Boetius, A., Reddy, C.M., and Henrichs, K.U., (2009). *Structure and function of a cold seep nurtured by seepage of heavy oil*. Goldschmidt Conference, Davos, Switzerland. June 25, 2009. (Presentation with abstract). Invited.
60. Eiserbeck C., Grice, K., Nelson, R.K., and Curiale, J., (2009). *An integrated molecular and isotope approach for estimating the age of crude oils and source rocks from Tertiary deltaic basins*. International Meeting on Organic Geochemistry, Bremen, Germany. September 9, 2009. (Presentation with abstract).
61. Ventura, G.T., Simoneit, B.R.T., Nelson, R.K., and Reddy, C.M., (2009). *Resolving the origin of unresolved complex mixtures in hydrothermal petroleum – novel methods for comprehensive two-dimensional gas chromatography*. International Meeting on Organic Geochemistry, Bremen, Germany. September 9, 2009. (Poster with abstract).
62. Ventura, G.T., Frysinger, G.S., Hall, G., Nelson, R.K., Raghuraman, B., Mullins, O., and Reddy, C.M., (2009). *Analysis of petroleum compositional similarity using multiway principle components analysis (MPCA) of comprehensive two-dimensional gas chromatographic data*. International Meeting on Organic Geochemistry, Bremen, Germany. September 9, 2009. (Poster with abstract).
63. Schubotz, F., Ventura, G.T., Nelson, R.K., Reddy, C.M., and Henrichs, K.U., (2009). *Deciphering mechanistic details of asphalt degradation and weathering at the ocean floor with GC×GC*. International Meeting on Organic Geochemistry, Bremen, Germany. September 10, 2009. (Presentation with abstract).
64. Eiserbeck C., Grice, K., Nelson, R.K., and Curiale, J., and Reddy, C.M., (2009). *An integrated molecular and isotope approach for estimating the age of crude oils and source rocks from the Beaufort-McKenzie basin and the north slope*. American Association of Petroleum Geologists Conference, 3P Arctic (The Polar Petroleum Potential Conference & Exhibition), Gubkin Russian State University of Oil & Gas, Moscow, Russia. September 30, 2009. (Poster with abstract).
65. Atolia, Esha, McKenna, A.M., Rodgers, R.P., Reddy, C.M., Nelson R.K., and Marshall, A.G. (2009). *3D graphical analysis of ultrahigh-resolution FT-ICR mass spectrometry data: Compositional comparison of a crude oil and associated production deposit*. 239th ACS National Meeting, San Francisco, CA, United States, March 21-25, 2010. (Poster with abstract).
66. Reddy, C.M., and Nelson R.K. (2010). *Comprehensive Two-dimensional Gas Chromatography (GC×GC): General Background and Application*. Chemical Engineering Department, Massachusetts Institute of Technology, Cambridge, MA April 13, 2010. (Oral Presentation).

67. Nelson R.K. (2010). *Fingerprinting Petroleum using Comprehensive Two-dimensional Gas Chromatography (GC×GC)*. National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL May 10, 2010. (Oral Presentation).
68. Ryan, J.P., Zhang, Y., Thomas, H., Rienecker, E., Nelson, R.K., Cummings, S. (2010) *High-resolution AUV mapping and sampling of a deep hydrocarbon plume in the Gulf of Mexico*. American Geophysical Union Meeting, San Francisco, California, USA. December 16, 2010. (Oral Presentation).
69. Rodgers, R.P., McKenna, A.M., Nelson, R.K., Robbins, W.K., Hsu, C.S., Reddy, C.M., Marshall, A.G. (2011). *Molecular level characterization and compositional archive for the Deepwater Horizon oil spill by FT-ICR Mass Spectrometry*. 241st ACS National Meeting & Exposition, Anaheim, CA, United States, March 27-31, 2011. (Oral Presentation).
70. Tcaciuc, A.P., MacFarlane, J., Nelson, R.K., Nipper, M., Carr R.S., Biedenbach, J., Reddy, C.M., Gschwend, P.M. (2011). *A Novel Methodology to Determine the Narcosis Potential of Contaminated Sediments by Using Polyethylene Samplers and Comprehensive Two-dimensional Gas Chromatography*. SETAC Europe 21st Annual Meeting, May 16, 2011 Milan, Italy. (Poster).
71. McKenna, A.M., Rodgers, R.P., Nelson, R.K., Reddy, C.M., Podgorski, D.C., Savory, J.T., Kaiser, N.K., Marshall, A.G. (2011). *Catastrophe in the Gulf of Mexico: Molecular Characterization of the Deepwater Horizon Oil Spill by FT-ICR MS and Comprehensive GC×GC*. American Society for Mass Spectrometry annual meeting. June 6, 2011. Denver, CO (Poster).
72. Nelson R.K. (2011). *Science in a Time of Crisis: GC×GC Applications and the Deepwater Horizon Oil Spill Disaster*. Leco sponsored session - American Society for Mass Spectrometry annual meeting. June 6, 2011. Denver, CO (Oral Presentation – Invited Talk).
73. Nelson R.K. and Reddy, C.M. (2012). *Environmental Forensics; Petroleum Fingerprinting Using Comprehensive Two-dimensional Gas Chromatography (GC×GC)*. Korean Ocean Research and Development Institute (KORDI), Goeje Island, South Korea. March 26, 2012. (Oral Presentation).
74. Nelson R.K. and Reddy, C.M. (2012). *Environmental Forensics; Petroleum Fingerprinting Using Comprehensive Two-dimensional Gas Chromatography (GC×GC)*. Korean Coast Guard Research Institute – Marine Pollution Response Bureau (KCGRI), Incheon, South Korea. March 28, 2012. (Oral Presentation).
75. Reddy, C.M., Nelson, R.K., Carmichael, C.A., Gros, J., Arey J.S (2012). *Advances in the Analysis of Petroleum Via Comprehensive Two-dimensional Gas Chromatography*. Petrophase XIII (13th International Conference on Petroleum Phase Behavior and Fouling, Saint Petersburg Beach, Florida. June 10-14, 2012. (Oral Presentation with Abstract).
76. Nelson, R.K., Reddy, C.M. (2012). *GC×GC Analysis of Petroleum Biomarkers: Fingerprinting Using Molecular Fossils*. Petrophase XIII (13th International Conference on Petroleum Phase Behavior and Fouling, Saint Petersburg Beach, Florida. June 10-14, 2012. (Poster).
77. Kong D., Moir, M., Nelson, R.K., Reddy, C.M., (2012). *Oil Spill Source Identification with Advanced and Tiered Analytical Tools*. National Environmental Monitoring Conference, Hyatt

Regency, Capitol Hill, Washington, DC August 6-10, 2012 (Oral Presentation with Abstract *gave half of the talk).

78. Radovic, J.R., Aeppli, C., Nelson, R.K., Reddy, C.M., (2012). *Short Term Photooxidative Weathering of Macondo Oil*. Deep-C Consortium Meeting, Tallahassee, Florida. August 21-22, 2012. (Poster with Abstract).
79. Aeppli, C., Carmichael, C.A., Nelson, R.K., Lemkau, K.L., Redmond, M.C., Valentine, D.L., Arakawa, N., Aluwihare, L.I., Reddy, C.M. (2012). *Formation of Oxygenated Hydrocarbons Upon Weathering After the Deepwater Horizon Disaster*. Deep-C Consortium Meeting, Tallahassee, Florida. August 21-22, 2012. (Poster with Abstract).
80. James, B.D.B., Carmichael, C.A., Aeppli, C., Nelson, R.K., Ellen K. Murphy, E.K., Radovic, J.R., Reddy, C.M., (2012). *Variability in Oiled Sand Patties Collected: How Different are Samples Collected Within Meters on a Beach?* Deep-C Consortium Meeting, Tallahassee, Florida. August 21-22, 2012. (Poster with Abstract).
81. Nelson, R.K., Carmichael, C.A., Radovic, J.R., Aeppli, C., Murphy, E.K., Lemkau, K.L., James, B.D.B., Blake Hallisey, B., Reddy, C.M., (2012). *Fingerprinting and Tracking Macondo Well Petroleum From The Deepwater Horizon Oil Spill Disaster In The Northern Gulf Of Mexico Using Comprehensive Two-dimensional Gas Chromatography (GC×GC)*. Deep-C Consortium Meeting, Tallahassee, Florida. August 21-22, 2012. (Poster with Abstract).
82. Nelson, R.K., Carmichael, C.A., Radovic, J.R., Aeppli, C., Lemkau, K.L., Main, C.E., Reddy, C.M., (2013). *Advanced Petroleum Fingerprinting Using Comprehensive Two-dimensional Gas Chromatography (GC×GC)*. Gulf of Mexico Research Initiative (GOMRI) Meeting, New Orleans, Louisiana. January 20-23, 2013. (Poster with Abstract).
83. Gros, J., Reddy, C.M., Nelson, R.K., Arey, J.S., (2013). *Quantifying Composition Alteration Through Biodegradation for Deepwater Horizon Oil in Surface Environments Using GC×GC*. Gulf of Mexico Research Initiative (GOMRI) Meeting, New Orleans, Louisiana. January 20-23, 2013. (Poster with Abstract).
84. Aeppli, C., Carmichael, C.A., Nelson, R.K., Valentine, D.L., Arakawa, N., Aluwihare, L.I., Reddy, C.M., (2013). *Characterization of Oxygenated Hydrocarbons Formed Upon Oil Weathering After the Deepwater Horizon Disaster*. Gulf of Mexico Research Initiative (GOMRI) Meeting, New Orleans, Louisiana. January 20-23, 2013. (Oral Presentation).
85. Carmichael, C.A., James, B.D.B., Nelson, R.K., Murphy, E. K., Radovic, J.R., Reddy, C.M. (2013). *Variability in Oiled Sand-patties Collected: How Different are Samples Collected Within Meters on a Beach?* Gulf of Mexico Research Initiative (GOMRI) Meeting, New Orleans, Louisiana. January 20-23, 2013. (Poster with Abstract).
86. Hall, G.J., Frysinger, G.S., Aeppli, C., Carmichael, C.A., Gros, J., Lemkau, K.L., Nelson, R.K., Reddy, C.M., (2013). *Precursors of Oxygenated Hydrocarbons in Weathered Oil Identified by Comprehensive Two-dimensional Chromatography and Chemometric Analysis*. Gulf of Mexico Research Initiative (GOMRI) Meeting, New Orleans, Louisiana. January 20-23, 2013. (Poster with Abstract).

87. Main, C.E., Nelson, R.K., Aeppli, C., Carmichael, C.A., Lemkau, K.L., Reddy, C.M., (2013). *Comparing Laboratory- and Field-weathered Oil from the Macondo Well*. Gulf of Mexico Research Initiative (GOMRI) Meeting, New Orleans, Louisiana. January 20-23, 2013. (Poster with Abstract).
88. Radovic, J.R., Aeppli, C., Nelson, R.K., Deiz, S., Bayona, J.M., Reddy, C.M., (2013). *Photooxidation of Triaromatic Steroids in Macondo Well Oil*. Gulf of Mexico Research Initiative (GOMRI) Meeting, New Orleans, Louisiana. January 20-23, 2013. (Poster with Abstract).
89. Aeppli, C., Valentine, D.L., Kellermann, M., Lorenson, T.D., Reddy, C.M., Nelson, R.K., (2013). *Oil Spill vs Natural Seepage: Contrasting Weathering Characteristics of Oil from the Macondo Well and Southern California Oil Seeps*. Gulf of Mexico Research Initiative (GOMRI) Meeting, New Orleans, Louisiana. January 20-23, 2013. (Poster with Abstract).
90. Rodgers, R.P., Nyadong, L., Lobodin, V.V., Ruddy, B.M., Corilo, Y.E., Podgorski, D.C., McKenna, A.M., Marshall, A.G., Nelson, R.K., Reddy, C.M., (2013). *A Petroleomic Approach to Environmental Analytical Chemistry*. Gulf of Mexico Research Initiative (GOMRI) Meeting, New Orleans, Louisiana. January 20-23, 2013. (Oral Presentation).
91. Aeppli, C., Nelson, R.K., Carmichael, C.A., Arakawa N., Aluwihare, L.I., Valentine, D.L., Reddy, C.M., (2013). *Characterization of recalcitrant oxygenated hydrocarbons formed upon oil weathering after the Deepwater Horizon disaster*. 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013. (Oral Presentation).
92. Rodgers, R.P., Ruddy, B.M., Lobodin, V.V., Nyadong, L., McKenna, A.M., Marshall, A.G., Nelson, R.K., Reddy C.M., (2013). *Recent advances in the analytical characterization of petrogenic material from the Deepwater Horizon incident*. 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013. (Oral Presentation).
93. Reddy C.M., Nelson, R.K., Valentine, D.L., Kellermann, M., (2013). *Analysis of drilling mud in oil sheens by comprehensive 2D gas chromatography*. 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013. (Oral Presentation).
94. McKenna, A.M., Lemkau, K.T., Aeppli, C., Carmichael, C.A., Valentine, D.L., Reddy, C.M., Nelson, R.K., de Corilo, Y., Marshall A.G., Ruddy, B.M., Ryan P Rodgers, R.P., (2013). *Expanding the analytical window of oil spill characterization by FT-ICR mass spectrometry: From the reservoir to the beach*. 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013. (Oral Presentation).
95. Timko, M.T., Schmois E., Patwardhan, P., Kida, Y., Class, C., Green, W.H., Nelson, R.K., Reddy C.M. (2013). *Sulfur group type response to an oxidative desulfurization treatment*. 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013. (Oral Presentation). *This presentation won the **R.A. Glenn Award** at the 245th ACS national meeting.
96. Aeppli, C., Nelson, R.K., Carmichael, C.A., Reddy, C.M. *Towards a characterization of recalcitrant oxygenated compounds in naturally weathered Macondo well*. Deep-C Consortium "All-Hands" Meeting, Tallahassee, FL September 10-11, 2013. (Poster)
97. Carmichael, C.A., Nelson, R.K., Aeppli, C., Reddy, C.M. *Building a comprehensive sample*

- repository to track the long-term impacts of the Macondo Well oil spill: An opportunity to engage Citizen Scientists.* Deep-C Consortium “All-Hands” Meeting, Tallahassee, FL September 10-11, 2013. (Poster)
98. Chen, H., Aeppli, C., Valentine, D., Nelson, R.K., Reddy, C.M., Ruddy, B., Kellerman, M., Rodgers, R., Marshall, A., McKenna, A. *Temporal and spatial characterization of beachfront natural oil seeps by FT-ICR mass spectrometry.* Deep-C Consortium “All-Hands” Meeting, Tallahassee, FL September 10-11, 2013. (Poster)
 99. Gros, J., Reddy, C.M., Aeppli, C., Nelson, R.K., Carmichael, C.A., Arey, J.S. *A new biodegradation index for weathered oils based on saturated hydrocarbons: insights from the Deepwater Horizon disaster.* Deep-C Consortium “All-Hands” Meeting, Tallahassee, FL September 10-11, 2013. (Poster)
 100. McNulty, M., Nelson, R.K., Reddy, C.M., Oberle, F. *Using petroleum hydrocarbons from the Prestige oil spill sediment as proxies for sediment turbation by fish trawling.* Deep-C Consortium “All-Hands” Meeting, Tallahassee, FL September 10-11, 2013. (Poster)
 101. Nelson, R.K., Aeppli, C., Carmichael, C.A., Reddy, C.M. *High resolution forensic analysis of surface sheens helps pinpoint source of oil leakage from the Deepwater Horizon.* Deep-C Consortium “All-Hands” Meeting, Tallahassee, FL September 10-11, 2013. (Poster)
 102. James, B.D., Reddy, C.M., Aeppli, C., Carmichael, C.A., Nelson, R.K. *Variability in the hydrocarbon composition of oil films on rocks along the Gulf coast post the Deepwater Horizon disaster.* Deep-C Consortium “All-Hands” Meeting, Tallahassee, FL September 10-11, 2013. (Poster)
 103. Irvine, G.V., Mann, D.H., Carls, M., Reddy, C.M., Nelson, R.K., Aeppli, C. *Slightly weathered oil from the Exxon Valdez spill persists on rocky Gulf of Alaska shores after 23 years.* Alaska Marine Science Symposium, Anchorage, Alaska January 21, 2014. (Presentation).
 104. Irvine, G.V., Mann, D.H., Carls, M., Reddy, C.M., Nelson, R.K., Aeppli, C. *Slightly weathered oil from the Exxon Valdez spill persists on rocky Gulf of Alaska shores after 23 years.* (Poster) ASLO/AGU Meeting Hawaii Convention Center, Honolulu, Hawaii February 23-28, 2014.
 105. Aeppli, C., Nelson, R.K., Kinnaman, F.S., Valentine, D.L., Reddy, C.M. *Identification of microbial and abiotic degradation of Macondo Well oil at the sea surface and on beaches.* Gulf of Mexico Oil Spill & Ecosystem Science Conference, Mobile, AL, January 26-29, 2014. (Presentation)
 106. Carmichael, C.A., Nelson, R.K., Aeppli, C., Reddy, C.M. *Building a comprehensive sample repository to track the long-term impacts of the Macondo well oil spill: An opportunity to engage Citizen Scientists.* Gulf of Mexico Oil Spill & Ecosystem Science Conference, Mobile, AL, January 26-29, 2014. (Poster)
 107. Gros, J., Reddy, C.M., Aeppli, C., Nelson, R.K., Carmichael, C.A., Arey, J.S. *A new biodegradation index for weathered oils based on saturated hydrocarbons: insights from the Deepwater Horizon disaster.* Gulf of Mexico Oil Spill & Ecosystem Science Conference, Mobile, AL, January 26-29, 2014. (Poster)

108. Nelson, R.K., Aeppli, C., Carmichael, C.A., Reddy, C.M. *High resolution forensic analysis of surface sheens helps pinpoint source of oil leakage from the Deepwater Horizon*. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Mobile, AL, January 26-29, 2014. (Poster)
109. James, B.D., Reddy, C.M., Aeppli, C., Carmichael, C.A., Nelson, R.K. *Variability in the hydrocarbon composition of oil films on rocks along the Gulf coast post the Deepwater Horizon disaster*. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Mobile, AL, January 26-29, 2014. (Poster)
110. Kellerman, M.Y., Redmond, M.C., Reddy, C.M., Aeppli, C., Nelson, R.K., Valentine, D.L. *Oil sheen weathering post-Deepwater Horizon*. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Mobile, AL, January 26-29, 2014. (Poster)
111. Prince, R.C., Butler, J., Nelson, R.K., Reddy, C.M., Aeppli. *NEBA of dispersant use should consider persistent residues formed by competing weathering processes*. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Mobile, AL, January 26-29, 2014. (Poster)
112. Nelson, R.K., Aeppli, C., Reddy, C.M. *High Resolution Forensic Analysis Of Surface Sheens Helps Pinpoint Source Of Oil Leakage From The Deepwater Horizon*. International Oil Spill Conference, (Science & Technology) Savannah, Georgia, May 5-8, 2014. (Poster)
113. Aeppli, C., Nelson, R.K., Carmichael, C.A., Valentine, D.L., Reddy, C.M. *Formation of recalcitrant oxygenated hydrocarbons by natural weathering after the Deepwater Horizon disaster*. International Oil Spill Conference, Savannah, Georgia, May 5-8, 2014. (Presentation)
114. McKenna, A. M., Chen, H., Lemkau, K. L., Nelson, R. K., Valentine, D., Reddy, C. M., Rodgers, R. P., Marshall, A. G. Biodegradation at the seafloor: Ultrahigh resolution FT-ICR mass spectral characterization of natural petroleum seeps in the Gulf of Mexico, Int'l Oil Spill Conference, Savannah, GA, May 7, 2014. (Presentation).
115. Kellermann, M.Y., Lemkau, K.L., Reddy, C.M., Aeppli, C. Nelson, R.K., Valentine, D.L. Chasing early chemical changes in surface oil slicks. Goldschmidt Conference, Sacramento, CA. June 11, 2014. (Poster)
116. Nelson, R.K., Swarthout, R., Koolen, H., Reddy, C.M., GCxGC comparison of Deepwater Horizon crude and Kirby intermediate fuel oil (IFO). Gulf of Mexico Oil Spill & Ecosystem Science Conference, Houston, TX, February 18, 2015. (Poster).
117. Gros, J., Nelson, R.K., Reddy, C.M., Socolofsky, S.A., Arey, J.S. Predicting the state and properties of Deepwater Horizon oil under pressure using the Peng-Robinson equation of state. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Houston, TX, February 18, 2015. (Poster).
118. Reddy, C.M., Nelson, R., Koolen, H., Swarthout, R., Aeppli, C., Sharpless, C., Stewart, O., Radovic, J., Valentine, D., Hall, G., O'Neil, G., McKenna, A., Chen, H., Krajewski, L., Rodgers, R. The oxidation of Macondo well oil: An update and vision. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Houston, TX, February 17, 2015. (Presentation). Invited.

119. Reddy, C.M., Nelson, R., Swarthout, R., Koolen, H. Unprecedented insights into the chemical complexity of coal tar from comprehensive two-dimensional gas chromatography. PittCon, New Orleans, LA, March 11, 2015. (Presentation). Invited.
120. Drollette, B.D., Schreglmann, K., Warner, N.R., Darrah, T.H., O'Connor, M.P., Karatum, O., Nelson, R.K., Elsner, M., Reddy, C.M., Vengosh, A., Jaskson, R.B., Plata, D.L. (2015). Trace levels of diesel range organic compounds in in shell groundwater wells in northeastern Pennsylvania elevated near Marcellus gas wells. American Chemical Society, Denver, CO, March 23, 2015. (Presentation).
121. Koolen, H., Swarthout, R., Nelson, R., Chen, H., Krajewski, L., Aeppli, C., McKenna, A., Rodgers, R.P., Reddy, C.M. Unprecedented inventory of coal tar compounds by an integrative approach comprising GCxGC-TOF MS and APPI(+)FT-ICR MS. American Society for Mass Spectrometry national meeting, St. Louis, MO, June 1, 2015. (Poster).
122. Marshall, A.G., McKenna, A.M., Corilo, Y.E., Lobodin, V.V., Krajewski, L.C., Aeppli, C., Reddy, C.M., Nelson R.K., Rodgers, R.P. Anatomy of an oil spill and its subsequent chemical evolution by ultrahigh-resolution Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. EnviroAnalysis 2015, Banff, Alberta, Canada, July 13, 2015. (Presentation).
123. Tcaciuc, A.P., Nelson, R., Reddy, C., Gschwend, P. *Application of GCxGC and passive dosing for characterizing mixture toxicity of hydrophobic organic chemicals (HOCs)*. American Chemical Society meeting, Boston, MA. August 19, 2015. (Presentation).
124. Elsner, Martin; Hoelzer, Kathrin; Sumner, Andrew J.; Karatum, Osman; Nelson, Robert K.; Drollette, Brian D.; O'Connor, Megan P.; D'Ambro, Emma; Getzinger, Gordon J.; Ferguson, P. Lee; Reddy, Christopher M.; Plata, Desiree L. *Indications of Transformation Products from Hydraulic Fracturing Additives in Shale Gas Wastewater*. European Geosciences Union General Assembly 2016, held 17-22 April, 2016 in Vienna Austria, p.18510.
125. Gros, Jonas; Reddy, CM; Nelson, RK; Socolofsky, SA; Arey, Jeremy Samuel, *Thermodynamic modeling of gas-liquid-water partitioning and fluid properties for Macondo reservoir fluid at deep-water conditions*. EPFL-TALK-216993
126. Bleich, Alexander; Letinski, Daniel; Connelly, Martin; Nelson, Robert; *Development of a protocol for measuring the biodegradation of crude oil components in sea water by two-dimensional GC*. Eastern Analytical Symposium and Exhibition. Somerset, NJ, USA, November 14-16, 2016.
127. Nelson, Robert, K.; Reddy, Christopher, M.; *Petroleum analysis and fingerprinting using comprehensive two-dimensional gas chromatography (GCxGC)*. 19th Australian Organic Geochemistry Conference. Fremantle, Western Australia, December 4-7, 2016.

Presentations at WHOI:

Nelson, R.K., Science Made Public. *The Bouchard 120 oil spill: what have we learned after two years of investigation?* August 2, 2005.

Nelson, R.K., Marine Chemistry & Geochemistry Seminar. *Searching for terrestrial plant biomarkers in deltaic petroleum (finding a needle in a haystack) – insights into ancient depositional environments.* November 10, 2009.

Nelson, R.K., Marine Chemistry & Geochemistry Cutting Edge Instrumentation Seminar. *The GC×GC Facility; What can very high resolution gas chromatography do for you?* January 12, 2016.

Shipboard Research Cruise Participation:

-ONR Sponsored Cruise (September 13-27, 1988). *R/V Robert Gordon Sproul*. Marine microlayer and near surface water sample collection cruise from La Jolla Bay to the Channel Islands, California.

-ONR Sponsored Cruise (October 9-13, 1989). *R/V Wecoma*. Marine microlayer and near surface water sample collection cruise from Newport Oregon to the San Diego, California.

-ONR Sponsored Cruise (October, 14-28, 1989). *R/V Robert Gordon Sproul*. Marine microlayer and near surface water sample collection cruise from La Jolla Bay to the Channel Islands, California.

-ONR Sponsored Cruise (September 4-5, 1992). *R/V Point Lobos*. Marine surfactant and chromophoric dissolved organic matter sample collection cruise in Monterey Bay, California.

-ONR Sponsored Cruise (August 24-27, 1993). *R/V Cape Henlopen*. Chromophoric dissolve organic matter in near surface water sample collection cruise from Delaware Bay to the Sargasso Sea.

-ONR Sponsored Cruise (November 9-12, 1993). *R/V Cape Henlopen*. Chromophoric dissolve organic matter in near surface water sample collection cruise from Delaware Bay to the Sargasso Sea.

-ONR Sponsored Cruise (March 15-17, 1994). *R/V Cape Henlopen*. Chromophoric dissolve organic matter in near surface water sample collection cruise from Delaware Bay to the Sargasso Sea.

-ONR Sponsored Cruise (April 25-29, 1994). *R/V Cape Henlopen*. Chromophoric dissolve organic matter in near surface water sample collection cruise from Delaware Bay to the Sargasso Sea.

-ONR Sponsored Cruise (22-September thru 6-October 1994). *R/V Cape Henlopen*. Marine microlayer and near surface water sample collection cruise from Delaware Bay to the Sargasso Sea.

-ONR-NSF Sponsored Co-OP Cruise (27-April thru 16-May 1995). *R/V New Horizon*. Marine Boundary Layer Cooperative Cruise in conjunction with the research platform FLIP which was moored off Monterey Bay, the R/V Point Sur, and the R/V Wecoma.

-ONR Sponsored Cruise (29-May thru 12-June, 1995). *R/V Cape Henlopen*. Marine microlayer and near surface water sample collection cruise from Delaware Bay to the Sargasso Sea.

-ONR-NSF Sponsored Co-OP Cruise (2-July thru 18-July, 1997). *R/V Oceanus*. Marine Boundary Layer Cooperative Cruise to the Sargasso Sea and Georges Bank.

-ONR-NSF Sponsored Cruise (Leg 1B 28-January thru 2-February, 2001 & Leg 1C 2-February thru 8-March 2001). *NOAA Ship Ronald H. Brown*. GasEx II Eastern Equatorial Pacific Gas Exchange Experiment.

-ONR-NSF (18-June thru 29-June, 2001). *R/V Oceanus* Chemical Mapping of the Sea-Surface Microlayer. Cruise to the Sargasso Sea and Eastern Atlantic (Delaware to Cape Cod).

-NSF Sponsored Cruise (17-24 April, 2004). *R/V Oceanus* Cruise # 400. Black Carbon In The Gulf Of Maine. Collection of sediment cores and water samples in the Gulf of Maine.

- NSF Sponsored Cruise (28-August thru 3-September, 2004). *R/V Cape Hatteras* Cruise # 1104. Black Carbon In The Gulf Of Maine. Collection of sediment cores and water samples in the Gulf of Maine.

-NOAA Sponsored Cruise (27-May thru 4-June, 2010). *NOAA Ship Gordon Gunter* Deepwater Horizon Oil Spill Damage Assessment. Deep plume water sampling. *Lead Sampler

-NOAA Sponsored Cruise (September, 2010). *Specialty Diver* Deepwater Horizon Oil Spill Damage Assessment. Deep plume water sampling. *Lead Sampler

-NOAA Sponsored Cruise (March 23, thru April 25, 2011). *HOS Sweet Water legs 2 & 3* Deepwater Horizon Oil Spill Damage Assessment. Seafloor survey, push core sampling via ROV and water column sampling. *Lead Sampler

-NOAA Sponsored Cruise (July 14, thru August 7, 2011). *HOS Sweet Water leg 4* Deepwater Horizon Oil Spill Damage Assessment. Seafloor survey, push core sampling via ROV and water column sampling. *Lead Sampler

-NOAA Sponsored Cruise (August 24, thru September 2, 2011). *HOS Sweet Water Cruise 6 Leg 1* Deepwater Horizon Oil Spill Damage Assessment. Seafloor survey, push core sampling via ROV and water column sampling. *Lead Sampler

-NOAA Sponsored Cruise (September 27 thru October 20, 2011) *HOS Sweet Water Cruise 6 Leg 2* Deepwater Horizon Oil Spill Damage Assessment. Seafloor survey, push core sampling via ROV and water column sampling. *Lead Sampler

-Taylor Energy Sponsored Cruise (July 14, thru August 7, 2011). *Fugro Geodetic Surveyor* Mississippi Canyon Block 20, Piston Core and Box Core survey around site of submerged oil rig. *Lead Sampler

Land Based Field Research:

DOE sponsored research. Speciation and Structural Characterization of Plutonium and Actinide-Organic Complexes in Surface and Groundwater (Hanford Nuclear Reservation, Richland, Washington, USA & Savannah River National Laboratory, Aiken, South Carolina, USA).

RKN – updated 06/12/17