

Joseph P. Smith, Ph.D.

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U.S. citizen; Active SECRET Clearance; Registered for Selective Service

Senior Science, Technology, and Engineering Professional with over 25+ Years of Government, Military, Private Sector, and Academic Experience.

- *Established record of excellence in academic teaching and research, project management, and the conduct of sponsored basic and applied scientific research in energy and climate, biogeochemistry, polar science, coastal oceanography, and environmental science*
- *Significant supervisory management experience*
- *Technical and operational experience and leadership in the U.S. Navy and Navy Reserve as nuclear-engineering qualified surface warfare officer and science and technology project officer*
- *Retired U.S. Navy and Navy Reserve Commander (O-5)*
- *Private sector experience in engineering project management and product engineering and development*

EDUCATION

2007 - Ph.D. Environmental Science; University of Massachusetts, Boston, MA

- Environmental, Earth, and Ocean Sciences Department Book Award - Outstanding Ph.D. Dissertation entitled, “*Short-to-Medium Term Sediment Accumulation in Low-Energy Subtidal Areas of the Lower Hudson River Estuary: Geochemical Tracers and Applications*”; Advisor: Dr. Curtis R. Olsen

2003 - M.S. Environmental Science; University of Massachusetts, Boston, MA

- M.S. Thesis entitled, “*Temporal Variations in Sediment and Contaminant Accumulation in Abandoned Harbor Slips of the Lower Hudson River Estuary*”; Advisor: Dr. Curtis R. Olsen

1996 - U.S. Navy Nuclear Engineer/Propulsion Plant Watch Officer (S8G); United States Navy Nuclear Power School and Prototype; Orlando, FL and Ballston Spa, NY

1993 - B.S. Physics; United States Naval Academy (USNA), Annapolis, MD; Graduated with merit; Minor in Russian Language

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PROFESSIONAL EXPERIENCE

9/1/2022-Present – Associate Chair, Department of Ocean and Atmospheric Sciences, U.S. Naval Academy (USNA), Annapolis, MD.

- Responsible for the long-term strategic planning and day-to-day operations of an academic department consisting of 5-6 civilian tenured or tenure-track faculty, 1-2 full-time, active-duty military professors, 3-4 rotational active-duty military instructors, 4 technical support staff, and 100-120 students across three year-groups

8/1/2010-Present – Assistant Professor (Military)/Assistant Professor/Associate Professor, Department of Ocean and Atmospheric Sciences, U.S. Naval Academy (USNA), Annapolis, MD.

- Course coordinator and lead instructor responsible for the design, execution, and instruction of intermediate-to-upper-level undergraduate courses in Ocean Acoustics, Biogeochemistry, Earth Science, Energy Analysis, Estuarine Oceanography, and Global Climate Change
- Developer, course coordinator, and lead for Capstone Seminar in Oceanography responsible for advising 10-20 students per year in the conduct of project-based independent research culminating in presentation and writing of a senior thesis
- Founder and Co-Lead of the U.S. Naval Academy Polar Science and Technology Program (USNA PS&TP), an externally-funded research group focused on promoting undergraduate Midshipman participation in and support for ongoing research and technology initiatives in polar science and technology of interest to the U.S. Department of Defense (DoD)
- Earth Science Lead for Department of the Navy sponsored interdisciplinary course on Energy Analysis, Policy, and Security with USNA Mechanical Engineering, Economics, and Political Science Departments
- Principle Investigator (PI)/Investigator (I) responsible for leading collaborative teams of military, academic, and private sector scientists and professionals in the conduct of externally-sponsored, field-orientated research and science & technology projects across a wide range of topics to include hydrology, polar science, environmental science, coastal biogeochemistry, application of data science methodologies, and the development and employment of low-cost, unmanned and autonomous systems. Also responsible for the presentation of scientific research findings in peer-reviewed publications, reports, and conference proceedings/presentations. Examples include:
 - (PI) The Defense Threat Reduction Agency (DTRA), Validation, Verification (V&V), and Improvement of Model Predictions for Waterborne Chemical Releases in Coastal Systems project, an ongoing modelling V&V effort to improve prediction of the dispersion, transport, and fate of waterborne threat agents in freshwater and coastal ocean systems. Current efforts are aimed at the development of ‘smart’ waterborne plume tracking capabilities using unmanned and autonomous surface platforms with a planned technology demonstration in Singapore in 2026
 - (co-PI) The U.S. DoD Strategic Environmental Research and Development Program (SERDP) sponsored Alaska North Slope Material Flux Study, a four-year field collaboration between the USNA-PS&TP, the U.S. Army Corps of Engineers,

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- Engineer Research & Development Center, Cold Regions Research & Engineering Laboratory (CRREL), Fairbanks, AK, the U.S. Military Academy (USMA), and the U.S. Coast Guard Academy (USCGA) utilizing Unmanned Aircraft Systems (UAS) and field based observations to investigate how seasonal-to-interannual variability in landscape-specific source contributions change surface water chemistry and constituent fluxes in the streams and rivers on the North Slope of Alaska
- (PI) The U.S. Defense Logistics Agency and Naval Research Lab Code 6138 sponsored Chlorination/De-Chlorination project to optimize pierside chlorination to reduce or control biofouling in submarine seawater systems at Pearl Harbor Naval Shipyard
 - (PI) Project Ocean, a U.S. Office of Naval Research (ONR Code 322MM) /American Meteorological Society (AMS), Science, Technology, Engineering, and Mathematics (STEM)-focused physical oceanography professional development course for K-12 educators
 - (PI) The USNA PS&TP/National Aeronautics and Space Administration (NASA)-sponsored Operation IceBridge (OIB) Arctic Field Experiment, Thule Air Base, Greenland, March 2017, a joint arctic field experiment for improving remote-sensed measurements of sea-ice thickness
 - (I) The Estuarine Cohesive Sediments (EsCoSed) project, Senigallia, Italy, Winter 2014, a joint, international research effort to investigate sediment transport processes involving USNA, the Università Politecnica delle Marche, Ancona, Italy, the U.S. Naval Research Laboratory, Seafloor Sciences Branch, Stennis Space Center, MS (NRL-SSC 7430), and the University of Florida supported by the ONR-G under a joint Naval International Cooperative Opportunities in Science and Technology Program (NICOP) grant
- Lead developer for the Severn River Watershed Observatory (SRWO), a continuous estuarine observation and monitoring network in the Severn River, a tidal tributary of the Chesapeake Bay estuary
 - Lead for USNA Science and Technology-focused Language Proficiency, Regional Expertise, Cultural Awareness (LREC) Program trips to Norway (2018 & 2019), Vietnam (2014 & 2015) in partnership with ONR-G
 - USNA Department of Ocean and Atmospheric Sciences Academic Assessment & Curriculum Coordinator
 - Mentor/adviser for 10-20 students per year in academic, professional, and moral development
 - Adjunct/affiliated faculty at University of Delaware and Washington College

2/5/2007-7/31/2010 –National Research Council Postdoctoral Research Associate and Research Scientist; Marine Biogeochemistry (Code 6114), Naval Research Laboratory (NRL), Washington, DC.

- Principle Investigator for National Geospatial Intelligence Agency (NGA) sponsored Elemental and Isotopic Tracking project (~\$200K/year)
- Project Research Scientist for Geochemistry, NRL Methane Hydrate Research Program

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- Post-doctoral Research Project, Methane Hydrate Research Program: “*Carbon Cycling in Gas Hydrate Bearing Marine Sediments: Geochemical Linkages Between Methane Fluxes and Authigenic Carbonate Formation*”
- Geochemistry Lead, Methane on the Arctic Shelf/Slope (MITAS) field experiment, *USCGC Polar Sea*, Beaufort Sea, North Slope, Alaska, September-October, 2009
- Geochemistry Lead, Alaminos Canyon (AC-07) field research experiment, *R/V Cape Hatteras*, Gulf of Mexico, June, 2007
- Lead Scientist for NRL Trace Element Analysis Laboratory centered around a Thermo-Finnigan ELEMENT-2 High-Resolution Inductively-Coupled Plasma Mass Spectrometer
- Conducted numerous field and laboratory research projects using (bio-) geochemical tracers including stable isotopes, trace elements, radioisotopes, and heavy isotopes to investigate the cycling of inorganic and organic constituents in sediment, soils, water, and biologic tissues and to develop a better understanding of how physical, chemical, and biological processes interact on short-to-medium term time scales to determine material fate and transport in terrestrial and aquatic systems; presented scientific research findings in peer-reviewed publications, reports, and conference proceedings/presentations

9/1/2000-2/5/2007 - Graduate Research Assistant / Teaching Assistant; Environmental, Earth, and Ocean Science (EEOS) Department, University of Massachusetts, Boston, MA.

- Manager for Biogeochemical Processes and Forensics Laboratory and Radioisotope Laboratory
- Conducted/led field research and presented scientific research findings in peer-reviewed publications, reports, and conference proceedings/presentations
- Teaching Assistant for courses in Estuarine Ecology and Management; Introduction to Global Environmental Change; Earth’s Dynamic Systems; Introduction to Chemistry
- Research Assistant, SF Strategic Grant for Exploratory Research project: Environmental Impact of the World Trade Center Attack on Sediment Quality and Dynamics in New York Harbor [(PI) Dr. C. R. Olsen (UMB)]
- National Science Foundation (NSF) Grade K-12 Watershed Integrated Sciences Partnership Fellow; Worked with over 60 6th grade public school children in the Boston Public School System
- NSF East Asia Pacific Summer Institute Fellow; Australian Institute of Marine Science, Townsville, QLD, Australia
- Team Leader - Massachusetts Executive Office of Environmental Affairs Boston Harbor Watershed Basinwide Water Quality Strategy Project
- Research Assistant, Southern Ocean GLOBECIII 2002 Winter Cruise ARSV LAURENCE M. GOULD: Physical and chemical factors influencing the abundance and distribution of *Euphausia suberba*. [(PI) Dr. Meng Zhou (UMB)]

9/1/1999-8/31/2000 - Product Engineer; Control Components Technology, General Electric Industrial Systems, Plainville, CT; Full-Time (minimum 40 hours/week); Annual salary ~\$60K

- Lead Product Engineer for multi-million dollar per year G.E. Control Component product line including push-buttons, lighting contactors, light towers, switches responsible for product quality control, ordering systems, and production line coordination

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- Control Components Technology Material Cost Out Team Leader. Achieved FY 2000 material cost out reduction goal of 10% (>\$1M)
- Project Leader for \$1.2M Mechanically-Held Lighting Contactor New Product Introduction (NPI) with U. S., Indian, and Puerto Rican design team

9/1/1998-8/31/1999 - Field Service Manager; Small Business Systems; Lucent Technologies, San Francisco, CA.

- Manager of Small Business Telecommunications Systems Division (12-15 Customer Service Engineers) for San Francisco, CA business area. Total annual revenues >\$2M
- Supervised customer service; managed scheduling, contracting, and invoicing for data and voice wiring; supervised Lucent Small Business System installations and repairs

ACTIVE MILITARY AND RESERVE DUTY, U. S. NAVY (US Navy Reserve Commander (O-5), retired 2015). *Nuclear Engineering Qualified Surface Warfare Officer, Science and Technology (S&T) Project Officer. Recipient of U.S. Navy Meritorious Service Medal, U.S. Navy Commendation Medal and U. S. Navy Achievement Medal (x5)*

U. S. Naval Reserve, Commander (1999 – 2015)

- Executive Officer and Training Officer, Naval Reserve Destroyer Squadron 28
- Project Officer, Naval Reserve S&T Program 38, Office of Naval Research (ONR)/NRL Science & Technology (S&T) Unit 107, Newport, RI and Headquarters Unit 100, Washington, DC
- ONR Expeditionary Warfare and Combatting Terrorism S&T Focus Area Coordinator
- Technology Demonstration and Test Lead, Cooperative Operations and Applied Science & Technology Studies (COASTS-08)/Crimson Viper-09 Field Technology Demonstrations, Thailand

Reactor Electrical Division Officer, USS NIMITZ (1996-1998)

- Led training and performance of 70+ Navy nuclear-trained technicians in the maintenance and operation of two aircraft carrier electrical plants
- Supervised safe/efficient nuclear plant operation in port, at sea, and during special evolutions
- Completed seven-month deployment in the Persian Gulf (September 1997 – March 1998) in support of Operation Southern Watch and United Nations mandates
- Nuclear Engineer; Qualified U.S. Navy Nuclear Propulsion Plant Watch Officer (A4W)

Antisubmarine Warfare Officer, USS CROMMELIN (1994-1995)

- Led training and performance of 14 sonar technicians in the employment, maintenance, and operation of ship undersea sonar, weapons, and countermeasure systems
- Completed six-month Western Pacific deployment with USS KITTY HAWK Battle Group for Korean Contingency Operations (July 1994 – December 1994)
- Qualified Officer of the Deck and Command Duty Officer. Supervised ship operations at sea, in port, and during special evolutions

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AWARDS AND RECOGNITION

- Co-author top research paper of 2017, U.S. Naval Research Laboratory (NRL) Annual Research Publication Awards Dinner (ARPAD)
- 2016 nominee for the U.S. Naval Academy Apgar Award for Excellence in Teaching
- U.S. Naval Research Laboratory, 2012 Chemistry Division Award for Superior Research Accomplishment and Technical Writing (co-author)
- Best Collaborative research presentation, 2011 Defense Threat Reduction Agency (DTRA) Chemical, Biological Defense (CBD) Conference, Las Vegas, NV, November 14-18
- U.S. Naval Research Laboratory, 2010 Contribution Award
- University of Massachusetts, Boston, EEOS Department Book Award - Outstanding PhD Dissertation, June 2007
- Outstanding presentation award (co-author); 2007 233rd National Meeting of the American Chemical Society (ACS), Chicago, IL
- Best student poster presentation; 2005 AEHS Meeting and West Coast Conference on Soils, Sediments and Water; March 13-17, 2005, San Diego, CA
- U.S. Navy Meritorious Service Medal; Navy Commendation Medal; Navy Achievement Medal (x5)
- Winner of 2000 GE Industrial Systems Components Technology Invention Disclosure Contest for disclosure entitled, “*Electronic Actuation for Mechanically Held Contactors*”

SKILLS, TRAINING, QUALIFICATIONS

- SECRET Clearance
- Engineering and Science & Technology Project Management
- U. S. Department of Defense Test and Evaluation (T&E) and systems acquisition
- DELFT-3D, MATLAB, PRO-E, SigmaPlot, SPSS, MATLAB, ESRI ArcGIS Pro (GIS), Surfer, Voxler, MS Windows/Office, Microsoft Project, DHTML/HTML, Java Script, Arduino
- Environmental sampling (soils, sediments, porewaters, and natural waters) and sample preparation techniques including: radionuclides, particulate organic carbon (POC), dissolved organic carbon (DOC), Chlorophyll-a (Chl-a), chromophoric dissolved organic matter (CDOM), nutrients, trace elements, microwave assisted acid digestions
- UV/Vis Spectrometry, Gamma Spectroscopy; Energy-Dispersive X-Ray Fluorescence (ED-XRF) Spectrometry; Fluorometry; General Spectrometry; Inductively-Coupled Plasma Mass Spectrometry (ICP-MS); Ion Chromatography; Elemental Analysis; Isotopic Ratio Mass Spectrometry (IRMS)
- Languages: Working French; Basic Russian
- Open Water SCUBA qualified (PADI)

PEER-REVIEWED PUBLICATIONS

- Smith, J.P.**, Gallaher, S.G., Douglas, T.A., Barker, A.J., O'Banion, M.S., Oxendine, C.E., Vas, D.A., Toniolo, H., and Sweet, C.R. (2023). Variability in dissolved carbon and iron in surface waters of rivers on the North Slope of Alaska over the summer thaw season. *Chemical Geology* (under revision for re-submission, original submitted August 2021).
- Barker, A., Sullivan, T., Baxter, W., Barbato, R., Gallaher, S., Patton, G., **Smith, J.P.**, and Douglas, T. (2023). Iron oxidation-reduction processes in warming permafrost soils and surface waters expose a seasonally-rusting Arctic watershed. *ACS Earth and Space Chemistry* 7(8): 1479–1495, <https://doi.org/10.1021/acsearthspacechem.2c00367>.
- Yang, H., Sherman, M., Koo, C., Treaster, L., **Smith, J.P.**, Gallaher, S., Goodlett, D., Sweet, C., and Ernst, R. (2023) Structure Determination of Lipid A with Multiple Glycosylation Sites by Tandem MS of Lithium-Adducted Negative Ions. *J. Am. Soc. Mass Spectrom.* 34(6): 1047–1055, <https://doi.org/10.1021/jasms.3c00014>.
- Postacchini, M., Manning, A.J., Calantoni, J., **Smith, J.P.**, Brocchini, M. (2023). A Storm Driven Turbidity Maximum in a Microtidal Estuary. *Estuarine, Coastal and Shelf Science* 288, 108350, <https://doi.org/10.1016/j.ecss.2023.108350>.
- Davies, A.R., **Smith, J.P.**, Mandell, D.S., Davis, G., and Wan, F.Y. (2022). Sustained wind forcing and water level anomalies in Annapolis, MD. *Earth Interactions*, 26(1): 52-66, <https://doi.org/10.1175/EI-D-21-0013.1>.
- Smith, J.P.**, Boyd, T.J., Cragan, J., and Ward, M.C. (2021). Dissolved rubidium to strontium ratio as a conservative tracer for wastewater effluent-sourced contaminant inputs near a major urban wastewater treatment plant. *Water Res.* 205: 117691, <https://doi.org/10.1016/j.watres.2021.117691>.
- Caton, P., Ernst, H., Flack, K., **Smith, J.P.**, and Swope, K. (2021). Waste flow, recycling, and greenhouse gas emissions: A case study of the comparative environmental impact of recycling approaches on a college campus. *J. Solid Waste Technol. Manage.*, 47(3): 446-455(10), <https://doi.org/10.5276/JSWTM/2021.446>.
- Santella, G. E. Gallaher, S.G., **Smith, J.P.** (2021). Early melt season variability of fast ice degradation due to small Arctic riverine heat fluxes. *World Academy of Science, Engineering and Technology, International Journal of Environmental and Ecological Engineering*, 15(4), 139-146.
- O'Banion, M.S., Oxendine, C.E., Eck, R.J., McGettigan, S.P., Wright, W.C., Gallaher, S.G., **Smith, J.P.**, and Douglas, T.A. (2020) Detection of Seasonal Arctic Terrain Change Using a Small Unmanned Aircraft System (sUAS) on the Alaskan North Slope. 2020 IEEE International Geoscience and Remote Sensing Symposium. Waikoloa, Hawaii, July 19-24, 2020.
- Smith, J.P.**, Brabander, D.J., Panek, L.A., Besancon, J.R. (2019). Enrichment of potentially toxic elements in the fine fraction of soils from Iraq and Kuwait. *J. Soils Sediments*, 19(10), 3545-3563, <https://doi.org/10.1007/s11368-019-02286-7>.
- Ernst, H., Caton, P., Flack, K., **Smith, J.P.**, and Swope, K. (2017). Amping-Up Pedagogy through Interdisciplinary Instruction: A Study of the Effects of Interdisciplinary Instruction on Undergraduate Attitudes and Values Related to Energy Issues at the U.S. Naval Academy. *Journal of Interdisciplinary Studies in Education*, 6(1), 1-14.
- Ackleson, S.G., **Smith, J.P.**, Rodriguez, L.M., Moses, W.J., and Russell, B.J. (2017). Autonomous coral reef survey in support of remote sensing. *Frontiers in Marine Science*, 4, 325. <https://doi.org/10.3389/fmars.2017.00325>.

- Coffin, R.B., **Smith, J.P.**, Yoza, B., Boyd, T.J., and Montgomery, M.T. (2017). Spatial variation in sediment organic carbon distribution across the Alaskan Beaufort Sea Shelf. *Energies*, 10(9), 12651286, <https://doi.org/10.3390/en10091265>.
- Brocchini, M., Calantoni, J., Postacchini, M., Sheremet, A., Staples, T., **Smith, J.P.**, Reed, A.H., Braithwaite, E.F., Lorenzoni, C., Russo, A., Corvaro, S., Mancinelli, A., and Soldini, L. (2017). Comparison between the wintertime and summertime dynamics of the Misa River estuary. *Mar. Geol.*, 385, 27-40, <https://doi.org/10.1016/j.margeo.2016.12.005>.
- Venegas, G.R., Wilson, P.S., Lee, K.M., Ballard, M.S., Reed, A.H., Roosen, E., Ecker, D., Fringer, K., and **Smith, J.P.** (2016). Shipboard low frequency sound speed measurements in the New England Mud Patch. *J. Acoust. Soc. Am.*, 139, 2111-2111, <https://doi.org/10.1121/1.4950280>.
- Sweet, C.R., Watson, R.E., Landis, C.A., and **Smith, J.P.** (2015). Temperature-Dependence of Lipid A Acyl Structure in *Psychrobacter cryohalolentis* and Arctic Isolates of *Colwellia hornerae* and *Colwellia piezophila*. *Marine Drugs*, 13(8), 4701–4720, <https://doi.org/10.3390/md13084701>.
- Rose, P.S., **Smith, J.P.**, Aller, R.C., Cochran, J.K., Swanson, R.L., and Coffin, R.B. (2015). Medically derived I-131 as a tool for investigating the fate of wastewater nitrogen in aquatic environments. *Environ. Sci. Technol.*, 49(17), 10312-10319. <https://doi.org/10.1021/acs.est.5b00189>
- Coffin, R.B., Osburn, C.L., Plummer, R.E., **Smith J.P.**, Rose, P.S., and Grabowski, K.S. (2015). Deep sediment-sourced methane contribution to shallow sediment organic carbon: Atwater Valley, Texas-Louisiana Shelf, Gulf of Mexico. *Energies*, 8(3), 1561-1583. <https://doi.org/10.3390/en8031561>.
- First, M.R., Robbins-Wamsley, S.H., Riley, S.C., Fisher, J.I., **Smith, J.P.**, Drake, L.A. (2014). Examination of additives used to augment “challenge water” used in verification testing of ballast water management systems: mass yields and biological impacts. *Management of Biological Invasions*, 5(4): 395–405, <http://dx.doi.org/10.3391/mbi.2014.5.4.10>.
- Smith J.P** and Coffin R.B. (2014). Methane flux and authigenic carbonate in shallow sediments overlying methane hydrate bearing strata in Alaminos Canyon, Gulf of Mexico. *Energies*, 7(9), 61186141. <https://doi.org/10.3390/en7096118>.
- Coffin, R.B., Hamdan, L.J., **Smith, J.P.**, Rose, P.S., Plummer, R.E., Yoza, B., Pecher, I., Montgomery, M.T. (2014). The contribution of vertical methane flux to shallow sediment carbon pools across the Porangahau Ridge, New Zealand. *Energies*, 7(8), 5332-5356, <https://doi.org/10.3390/en7085332>.
- Coffin RB, **Smith JP**, Plummer RE, Yoza B, Millholland LC, Montgomery MT. 2013. Spatial variation in shallow sediment methane sources and cycling on the Alaskan Beaufort Sea shelf/slope. *Mar. Pet. Geol.*, 45: 186–197, <https://doi.org/10.1016/j.marpetgeo.2013.05.002>
- Nghiem, S.V., Shepson, P.B., Simpson, W., Perovich, D.K., Sturm, M., Douglas, T., Rigor, I.G., Clemente-Colón, P., Burrows, J.P., Richter, A., Steffen, A., Staebler, R., Obrist, D., Moore, C., Bottenheim, J., Platt, U., Pöhler, D., General, S., Zielcke, J., Fuentes, J.D., Hall, D.K., Kaleschke, L., Woods, J., Hager C., **Smith, J.P.**, Sweet, C.R., Pratt, K., Custard, K., Peterson, P. Walsh, S., Gleason, E., Sait, E., Webster, M., Lieb-Lappen, R., Linder, C., and Neumann, G. (2013). Arctic sea ice reduction and tropospheric chemical processes. In: BIONATURE 2013: The Fourth International Conference on Bioenvironment, Biodiversity, and Renewable Energy (Lisbon, Portugal, March 24-29): International Academy, Research, and Industry Association, p. 4-8.

- Rose, P.S., **Smith, J.P.**, Cochran, J.K., Aller, R.C., and Swanson, R.L. (2013). Behavior of medically-derived I-131 in the tidal Potomac River. *Sci. Total Environ.*, 452, 87-97, <https://doi.org/10.1016/j.scitotenv.2013.01.055>.
- Montgomery, M.T., Coffin, R.B., Boyd, T.J., **Smith, J.P.**, Plummer, R.E., Walker, S.E., and Osburn, CL. (2011). 2,4,6-Trinitrotoluene mineralization and bacterial production rates of natural microbial assemblages from coastal sediments. *Environ. Pollut.*, 59(12), 3673-80, <https://doi.org/10.1016/j.envpol.2011.07.018>
- Cantwell, M.G., Wilson, B.A., Zhu, J., King, J.W., Wallace, G.T., Olsen, C.R., Burgess, R.M., and **Smith, J.P.** (2010). Temporal trends of triclosan contamination in dated sediment cores from four urbanized estuaries: Evidence of preservation and accumulation. *Chemosphere*, 78, 347-352, <https://doi.org/10.1016/j.chemosphere.2009.11.021>.
- Leski, T.A., Gregory, M.J., Malanoski, A.P., **Smith, J.P.**, Glaven, H., Wang, Z., Stenger, D.A., and Lin, B. (2010). Analysis of dust samples from the Middle East using high density resequencing microarray 'RPM-TEI'. In: Proc. SPIE 7666: Sensors, and Command, Control, Communications, and Intelligence (C3I) Technologies for Homeland Security and Homeland Defense IX (Orlando, FL, April 05): International Society for Optics and Photonics, p. 76661E.
- Smith, J.P.**, Bullen, T.D., Brabander, D.J., and Olsen, C.R. (2009). Strontium isotope record of seasonal scale variations in sediment sources and sediment trapping in low-energy, subtidal areas of the lower Hudson River estuary. *Chem. Geol.*, 264(1-4), 375-384, <https://doi.org/10.1016/j.chemgeo.2009.03.026>.
- Smith, J.P.**, Oktay, S.D., Kada, J., and Olsen, C.R. (2008). Iodine-131: A potential short-lived, wastewater-specific particle tracer in an urbanized estuarine system. *Environ. Sci. Technol.*, 42, 5435-5440. <https://doi.org/10.1021/es800418c>
- Coffin, R.B., Hamdan, L., Plummer, R.E., **Smith, J.P.**, Gardner, J., and Wood, W.T. (2008). Analysis of sulfate and methane flux in methane charged sediments from the Mississippi Canyon, Gulf of Mexico. *Mar. Pet. Geol.*, 25(9), 977-987, <https://doi.org/10.1016/j.marpetgeo.2008.01.014>.
- Yang, S.L., Zhang, J., Zhu, J., **Smith, J.P.**, Dai, S.B., Gao, A., and Li, P. (2005). Impact of dams on Yangtze River sediment supply to the sea and delta intertidal wetland response. *J. Geophys. Res. (Earth Surface)*, 110, F03006, <https://doi.org/10.1029/2004JF000271>.
- Oktay, S.D., Brabander, D.J., **Smith, J.P.**, Kada, J., Bullen, T.D., and Olsen, C.R. (2003). WTC geochemical fingerprint recorded in New York Harbor sediments. *EOS Transactions of the American Geophysical Union*, 84(3), 21-28.

REPORTS

- Smith, J.P.** and the USNA PS&TP – NASA OIB ICEX-2017 Team (2017). Trip Report: U.S. Naval Academy (USNA) Polar Science & Technology Program (USNA PS&TP) – NASA Operation IceBridge (OIB) Ice Experiment (ICEX-2017), Oceanography Department, U.S. Naval Academy, Annapolis, MD, 29p.
- Smith, J.P.**, Masutani, S.A., Yoza, B.A., Kurasaki, R., Kinoshita, C., Montgomery, M.T., and Coffin, R.B. (2014). Aerosolization During Boron Nanoparticle Multi-Component Fuel Group Burning Studies. Technical Memorandum, NRL/MR/6110--14-9506: United States Naval Research Laboratory, Washington, 37p.

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- Smith, J.P.**, Baker, B.H., Kelly, S.J., and Muller, A.C. (2013). Continued Validation and Improvement of Model Predictions for the Dispersion and Fate of Reactive Chemical Releases in Estuarine Systems. DTRA Chemical and Biological Technologies Service Academy Research Initiative 2012-2013 End of Year Science Report: Oceanography Department, U.S. Naval Academy, Annapolis, MD, 9 p.
- Smith, J.P.**, Cary, C.F., Kapuschansky, C.J., and Muller, A.C. (2012). Validation of Model Predictions for the Dispersion and Fate of Reactive Chemical Releases in a Sub-estuary of the Chesapeake Bay. DTRA Chemical and Biological Technologies Service Academy Research Initiative 2011-2012 End of Year Science Report: Oceanography Department, U.S. Naval Academy, Annapolis, MD, 4 p.
- Coffin, R.B., Hamdan L.H., **Smith, J.P.**, Plummer, R., Millholland, L.C., Larson, R., and Wood, W.T. (2010). Arctic Ocean Methane Hydrate Exploration: Energy and Climate Change. Technical Memorandum, NRL/MR/6110-11-9330: U. S. Naval Research Laboratory, Washington, DC. 30 p.
- Montgomery, M.T., Coffin, R.B., Boyd, T.J., Plummer, R.E., Hamdan, L.J., **Smith, J.P.**, Walker, S.E., Dittel, A., Masutani, S.M., Li, Q.X., and Osburn, C.L. (2009). Bacterial production and contaminant mineralization in sediments of the Ala Wai Canal, Oahu, Hawai'i. Technical Memorandum: NRL/MR/6114--09-9212: United States Naval Research Laboratory, Washington, DC. 55 p.
- Coffin, R.B., Hamdan, L.J., **Smith, J.P.**, Rose, K., Downer, R., Edsall, D., Gardner, J., Hagen, R., and Wood, W.T. (2008). Geochemical evaluation of deep sediment hydrate deposits on Alaminos Canyon, Block 818, Texas-Louisiana Shelf. Cruise Report for UNOLS Ship R/V CAPE HATTERAS Cruise NRL AC-07. U.S. Department of Energy, National Energy Technology Laboratory DE-AI2606NT42878 Gas Hydrate Research in Deep Sea Sediments and Seeps: U.S. Naval Research Laboratory, Washington, DC. 173 p.
- Walker, S.W., Osburn, C.L., Boyd, T.J., Hamdan, L.J., Coffin, R.B., Montgomery, M.T., **Smith, J.P.**, Monteil, F., and Hawari, J. (2006). Mineralization of 2,4,6-Trinitrotoluene (TNT) in Coastal Waters and Sediments. Technical Report: NRL/FR/6114-06-10135; FR-10135: U.S. Naval Research Laboratory, Washington, DC. 44 p.

BOOK CHAPTERS

- Brocchini, M., Postacchini, M., Melito, L., Perugini, E., Manning, A.J., **Smith, J.P.**, Calantoni, J. (2021). Wave-forced dynamics at microtidal river mouths. In: River Deltas - Recent Advances (Manning, A.J. ed). IntechOpen Limited, UK, <https://doi.org/10.5772/intechopen.99143>. Available from: <https://www.intechopen.com/online-first/77793>.
- Montgomery, M.T., Boyd, T.J., **Smith, J.P.**, Walker, S.E., and Osburn, C.L. (2011). "2,4,6-Trinitrotoluene mineralization and incorporation by natural bacterial assemblages in coastal ecosystems". In: Chemistry of Explosives and Propellant Compounds in Soils and Marine Systems: Distributed Source Characterization and Remedial Technologies, ACS Symposium Series 1069. Washington, DC: ACS Publications. pp. 171-184.

PATENTS

- Mani, N., Agali, R., Pandit, A.D., Sridhar, K.V., **Smith, J.P.**, Phung, T.H., Lesslie, D.J., Piri, S.K., Shankar, G.C., and Zuffelato, D.C. (2004). November 9, Electronic actuation for mechanically held contactors. United States Patent No. 6,816,353.

Joseph P. Smith, Ph.D.

Cassagrande, R.J., Lesslie, D.J., Pitzen, C.S., Figueroa, A.A., Ralat, E., Gonzalez, J.F., Natarajan, M., Ramadevi, A., Pandit, A.D., Sudan, M., Sridhar, K.V., Phung, T.H., Zuffelato, D.C., and **Smith, J.P.** (2003). September 30. Field configurable contacts and contactor. United States Patent No. 6,628,184.

CONFERENCE PRESENTATIONS/INVITED TALKS

- Smith, J.P.**, Gallaher, S.G., Barker, A.J., Douglas, T., Vas, D.A., and O'Banion, M.S. (2023). Enhanced Constituent Fluxes in the Sagavanirktok River on the North Slope of Alaska During the Summer Thaw Season. Oral Presentation at Goldschmidt2023 Conference, Lyon, France, July 8-14 (Session Converner/Co-Chair).
- Gallaher, S.G., **Smith, J.P.**, O'Banion, M.S., Douglas, T.A., and Barker, A.J. (2023). Material Fluxes through Small River Systems on the Alaskan North Slope (SERDP Project #RC19-1382). Oral Presentation at: U.S. Department of Defense Strategic Environmental Research and Development Program, Resource Conservation (RC) In Progress Review Meeting, Eglin Air Force Base, FL, March 6-9.
- Barker, A.J., Douglas, T., Barbato, R., Sullivan, T.D., McInturff, G., Gallaher, S.G., and **Smith, J.P.** (2022). Iron Speciation and Mobility at the Permafrost-Active Layer Transition Zone. Oral presentation (B23A-02) at: American Geophysical Union (AGU) 2023, Chicago, IL, December 12-16.
- Smith, J.P.** and Hickman B. (2022). Improvement of Model Predictions for Waterborne Hazard Fate and Transport and the Development of Autonomous Surface Platforms and Unmanned Systems for 'Smart' Chemical Plume Tracking in Coastal Systems. Poster presentation at: 2022 Chemical and Biological Defense Science & Technology (CBD S&T) Conference, San Francisco, CA, December 6-9.
- Sweet, C., Chandler, C., Brough, T., Koo, C., Murray, A., Treaster, L. **Smith, J.P.**, and Ernst, R. (2022). Metagenomic and Culture-Based Characterization of the Chesapeake Bay Winter and Summer Planktonic Microbiomes. Poster presentation at: ASM Microbe 2022, Washington, DC, June 9-13.
- Yang, H., Chandler, C.E., Sherman, M.E., Scott, A.J., Koo, C.J., Treaster, L.M., **Smith, J.P.**, Gallaher, S.G., Goodlett, D.R., Sweet, C.R., and Ernst, R.K. (2022). Structural analysis of alkali metal adducted Ara4N modified lipid A by FLATn+. Poster presentation at: 70th ASMS Conference on Mass Spectrometry and Allied Topics, Minneapolis, MN, June 5-9.
- Smith, J.P.**, Foxen, B., Gallaher, S.G., Keglovits, D., Barker, A.J., Douglas, T.A., O'Banion, M.S. (2022). Thaw Season Constituent Fluxes Through Arctic Rivers to Alaskan North Slope Coastal Waters. Virtual poster at: American Geophysical Union (AGU) 2022 Ocean Sciences Meeting, February 24 – March 03.
- Schreiber-Abshire, W., **Smith, J.P.**, Clark, J., and Kauffman, C.M. (2022). The New Project Ocean Course and other AMS Professional Development Opportunities for K-12 Educators. Virtual presentation at: 102st American Meteorological Society (AMS) Annual Meeting, 31st Conf on Education, Houston, TX, January 23-27.
- Davies, A.R., Barrett, B.S., Spedero, C.P., **Smith, J.P.** (2022). Can MJO Variability Modulate Surface Ocean Currents in the Bay of Bengal on Subseasonal Timescales? Poster at: 102st American Meteorological Society (AMS) Annual Meeting, Houston, TX, January 23-27.

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- Barker, A., Sullivan, T., Barbato, R., McInturff, G., Saari, S., Douglas, T., Gallaher, S., and **Smith, J.P.** (2021). Using Geophysics to Understand Seasonal Controls on Metal Transport in Arctic Watersheds (Invited). Oral Presentation at American Geophysical Union (AGU) Fall Meeting Virtual Conference, December 13-17.
- Keglovits, D.A., Foxen, B., **Smith, J.P.**, Gallaher, S.G, Barker, A.J., Douglas, T.A., O'Banion, M.S., Prickett, J.K., Ruth, A., and the Alaska North Slope Material Flux Study Team (2021). Factors Influencing Variability in Surface Water Chemistry and Material Fluxes Through Rivers and Streams on the North Slope of Alaska During the Open Water Season. Virtual poster at: 2021 SERDP & ESTCP Symposium, Washington, DC, November 29-December 3.
- Wantlin, N.J., O'Banion, M.S., Prickett, J.K., Oxendine, C.E., Gallaher, S.G., **Smith, J.P.**, Douglas, T.A., Barker, A.J. (2020). Monitoring of Permafrost Degradation with Unmanned Aircraft Systems (UAS). Virtual poster at: 2021 SERDP & ESTCP Symposium, Washington, DC, November 29 – December 3.
- Barker, A., McInturff, G., Douglas, T., Gallaher, S., and **Smith, J.P.** (2021). Fe speciation at the permafrost-active layer boundary. Oral Presentation at Goldschmidt 2021 Virtual Conference, July 4-21.
- Santella, G. E. Gallaher, S.G., and **Smith, J.P.** (2021). Early melt season variability of fast ice degradation due to small Arctic riverine heat fluxes. Virtual presentation at: the International Conference on Cryosphere and Global Warming (ICCGW), Paris, France, May 17-18.
- Hess, M.M.H., Tracy, B.M., Hickman, B., and **Smith, J.P.** (2021). Spatial distribution of microplastics and synthetic particulates in the Severn River and Annapolis Harbor. Virtual poster presentation at: National Water Quality Monitoring Council 12th National Monitoring Conference, April 19-23.
- Davies, A.R., **Smith, J.P.**, and Wan, F.Y. (2021). Using machine learning to better predict and understand coastal nuisance flooding in Annapolis, Maryland. Virtual poster at: 101st American Meteorological Society (AMS) Annual Meeting/ 19th Symposium on the Coastal Environment, Boston, MA, January 13.
- Wan, F., Davies, A.R., and **Smith, J.P.**, 2021. Application of machine learning methods to better quantify water-level anomalies in Annapolis, MD. Virtual poster at: 101st American Meteorological Society (AMS) Annual Meeting/20th Student Conference, Boston, MA, January 10.
- Spedero C.P., Barrett, B.S., Davies, A.R., and **Smith, J.P.** (2021). Sub-seasonal variability of surface ocean currents and chlorophyll-a concentration in the Bay of Bengal. Virtual poster at: 101st American Meteorological Society (AMS) Annual Meeting/20th Student Conference, Boston, MA, January 10.
- Smith, J.P.**, Gallaher, S.G., Cofer, H.G., Long, K.G, Barker, A.J., Douglas, T.A., O'Banion, M.S., and Oxendine, C.E. (2020). Seasonal variability in biogeochemical and material fluxes through rivers on the North Slope of Alaska. Virtual eLightning presentation at: American Geophysical Union (AGU) 2020 Fall Meeting, December 16.
- Gallaher, S.G., **Smith, J.P.**, Long, K.G., Cofer, H.G., Barker, A.J., Douglas, T.A., O'Banion, M.S., and Oxendine, C.E. (2020). Mass fluxes through small river systems on the Alaskan North Slope in response to spatial and temporal thermodynamic variations. Virtual iPoster presentation at: American Geophysical Union (AGU) 2020 Fall Meeting, December 15.

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- Cofer, H.G., **Smith, J.P.**, Gallaher, S.G., Long, K.G., Barker, A.J., Douglas, T.A., O'Banion, M.S., and Oxendine, C.E. (2020). Seasonal variability in material fluxes through small rivers and streams on the North Slope of Alaska. Virtual presentation at: 2020 SERDP & ESTCP Symposium, Washington, DC, November 30.
- Long, K.G., Gallaher, S.G., **Smith, J.P.**, Cofer, H.G., Barker, A.J., Douglas, T.A., O'Banion, M.S., and Oxendine, C.E. (2020). Estimates of seasonal lateral heat transport via North Slope small river systems to the coastal ocean. Virtual presentation at: 2020 SERDP & ESTCP Symposium, Washington, DC, November 30.
- Johantges, A., O'Banion, M.S., Oxendine, C.E., Gallaher, S.G., **Smith, J.P.**, Douglas, T.A., and Barker, A.J. (2020). Leveraging immersive visualization technology for the investigation of Arctic terrain change tied to permafrost degradation. Virtual presentation at: 2020 SERDP & ESTCP Symposium, Washington, DC, November 30.
- Smith, J.P.** (2020). Preliminary Results from the U.S. Naval Academy Polar Science & Technology Program Alaska North Slope Material Flux Study: Spring-to-Late Summer Variability in Material Fluxes. Presented at: Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science Seminar Series, Solomons, MD, February 12 (INVITED).
- Davies, A.R., **Smith, J.P.**, Mandell, D.S., Davis, G., Greenberg, L.E., and Warnimont, A.R. (2020). An Analysis of Long-Term Trends and Meteorological Drivers of Coastal Nuisance Flooding in Annapolis, MD. Poster presented at: 18th Symposium on the Coastal Environment, 100th American Meteorological Society (AMS) Annual Meeting, Boston, MA, January 12-16.
- Doyle, E.J., **Smith, J.P.**, Barker, A.J., Gallaher, S.G., Douglas, T.A., Sweet, C.R., O'Banion, M.S., Oxendine, C., and the Alaska North Slope Material Flux Study Team (2019). Preliminary Results of River and Stream Chemistry from the U.S. Naval Academy (USNA) Polar Science & Technology Program (PS&TP) Alaska North Slope Material Flux Study. Poster presented at: 2019 SERDP & ESTCP Symposium, Washington, DC, December 02-05.
- Gallaher, S.G., **Smith, J.P.**, O'Banion, M., and Oxendine, C. (2019). Land, Snow, Ice and Tundra Surveys from Service Academy Polar Science and Technology Programs. Poster presented at: National Geospatial Intelligence Agency (NGA) Arctic Symposium, Springfield, VA, November 21.
- McClelland, M.R., **Smith, J.P.**, Davies, A.R., and Ward, M.C. (2019). System for Hazard Assessment of Released Chemicals (SHARC) Model Validation and Verification Studies: Improvement of Model Predictions for Chemical Releases in Dynamic Estuarine Systems. Poster presented at: U.S. Defense Threat Reduction Agency (DTRA) 2019 Chemical and Biological Science & Technology (CBD S&T) Conference, Cincinnati, OH, November 17-21.
- Caton, P., Ernst, H., Flack, K., **Smith, J.P.**, and Swope, K. (2019). Tracking the Movement of Waste and its Environmental Impact: An Institutional Case Study. Paper presented at: 34th International Conference on Solid Waste Technology and Management, Annapolis, MD, March 31-April 3.
- Smith, J.P.**, Davies A.R., Keppel, A., and Rodriguez, L. (2019). Filling the gaps: how autonomous vehicles enhance fixed station water quality monitoring. Paper presented at: 11th National Monitoring Conference, National Water Quality Monitoring Council, Denver, Colorado, March 25-29 (INVITED).

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- Paschall, R., **Smith, J.P.**, Keppel, A, Trembanis, A., Ackleson, S., Rodriguez, L., and Davies, A.R. (2019). If Autonomous Underwater Vehicles (AUVs) are the next wave in water quality monitoring, are Autonomous Surface Vehicles (ASVs) the wave on the horizon? Paper presented at: 11th National Monitoring Conference, National Water Quality Monitoring Council, Denver, Colorado, March 25-29 (**INVITED**).
- Davis, G.W., Davies, A.R., and **Smith, J.P.** (2019). Local-scale water level differences and meteorological drivers in Annapolis, MD. Poster presented at: 18th Annual Student Conference, 99th American Meteorological Society (AMS) Annual Meeting; Phoenix, AZ, January 6-10.
- Gallagher, S. G. and **Smith, J.P.** (2018). U. S. Naval Academy Polar Science and Technology Program (USNA PS&TP). Poster presented at: 2018 DoD Arctic Science & Technology Synchronization Workshop, U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, May 16-18.
- Smith, J.P.**, Coffin, R.B., and Rose P.S. (2017). Factors Influencing Spatial Variability in Late Summer Methane Fluxes from the North Slope of Alaska. Paper presented at: 2017 Fiery Ice: 11th International Methane Hydrate R&D Workshop, Texas A&M-Corpus Christi, Corpus Christi, TX, December 05-08 (**INVITED**).
- Smith, J.P.**, Cragan, J., and Ward, M. (2017). System for Hazard Assessment of Released Chemicals (SHARC) Model Validation and Verification Studies in Dynamic Estuarine Systems. Poster presented at: DTRA Chemical and Biological Defense Science & Technology (CBD S&T) Conference, Long Beach, CA, November 27-30.
- Smith, J.P.**, Cragan, J., Swick, W., and Ward, M. (2017). Validation, Verification, and Improvement of Model Predictions for Chemical Releases in the Tidal-Fresh Potomac River. Paper presented at: Coastal and Estuarine Research Federation, 24th Biennial Conference, Providence, RI, November 5-9 (**INVITED**).
- Smith, J.P.**, Barrett, B.S., Kriebel, D., Disher, T. (2017). Integrating cultural experience with a Science, Technology, Engineering, and Mathematics (STEM) learning for undergraduate students under the U.S. Naval Academy Language Skills, Regional Expertise, and Cultural Awareness (LREC) Program. Paper presented at: Second Symposium on US-International Partnerships: 97th American Meteorological Society Annual Meeting; Seattle, WA, January 22-26.
- Smith, J.P.** (2017). The U. S. Naval Academy Polar Science and Technology Program (USNA-PS&TP). Paper presented at: 14th Conference on Polar Meteorology and Oceanography: 97th American Meteorological Society Annual Meeting; Seattle, WA, January 22-26.
- Smith, J.P.** (2017). The U. S. Naval Academy Polar Science and Technology Program (USNA-PS&TP). Paper presented at: 14th Conference on Polar Meteorology and Oceanography: 97th American Meteorological Society Annual Meeting; Seattle, WA, January 22-26.
- Byers, C., Petty, A.A., **Smith, J.P.** (2017). Exploring the use of commercial off-the-shelf (COTS) unmanned quadcopters to identify and characterize ice surface features. Poster session presented at: 14th Conference on Polar Meteorology and Oceanography: 97th American Meteorological Society Annual Meeting; Seattle, WA, January 22-26.
- Alvarado, P., Gohen, J., Daus, J., Jackson, C., Kim, A., Mason, C., Nason, M., Davids, S., **Smith, J.P.** and Woods, J. (2017). Developing a small unmanned aircraft system to support polar science research. Poster session presented at: Program for Arctic Regional Climate Assessment (PARCA) Meeting: NASA Goddard Space Flight Center; Greenbelt, MD, January 24.

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- Byers, C., Petty, A.A., Woods, J., and **Smith, J.P.** (2017). Exploring the use of commercial off-the-shelf (COTS) unmanned quadcopters to identify and characterize ice surface features. Poster session presented at: Program for Arctic Regional Climate Assessment (PARCA) Meeting: NASA Goddard Space Flight Center; Greenbelt, MD, January 24.
- Claudy, C., Ryan, J.P., **Smith, J.P.**, and Woods, J. (2017). Communicating science with a humanities perspective in support of the National Aeronautics and Space Administration (NASA) Operation IceBridge (OIB) Program. Poster session presented at: Program for Arctic Regional Climate Assessment (PARCA) Meeting: NASA Goddard Space Flight Center; Greenbelt, MD, January 24.
- Ma, T., Schultz, M., **Smith, J.P.**, Rigor, I., Woods, J., and USNA Ice-Buoy Engineering Design Teams. (2017). Development of an ice-capable buoy to support the National Aeronautics and Space Administration (NASA) Operation IceBridge (OIB) Program. Poster session presented at: Program for Arctic Regional Climate Assessment (PARCA) Meeting: NASA Goddard Space Flight Center; Greenbelt, MD, January 24.
- Smith, J.P.**, Davids, S., Ryan, J.P., Henderson, G., Woods, J., and the USNA Polar Science and Technology Program Team (2017). U. S. Naval Academy Polar Science and Technology Program (USNA PS&TP) and the National Aeronautics and Space Administration (NASA) Operation IceBridge (OIB) Program. Poster session presented at: Program for Arctic Regional Climate Assessment (PARCA) Meeting: NASA Goddard Space Flight Center; Greenbelt, MD, January 24.
- Smith, J.P.**, Reed, A.H., Boyd, T.J. (2016). Application of chromophoric dissolved organic matter absorbance and Excitation-Emission Matrix Fluorescence Spectra (EEMS) to investigate clay-organic matter flocculation processes in riverine-estuarine systems. Paper presented at: American Geophysical Union (AGU): 2016 Fall Meeting; San Francisco, CA, December 12-16.
- Ernst, H., Flack, K., **Smith, J.P.**, Swope, K. (2016). Amping-up pedagogy through interdisciplinary instruction: A study of the effects of interdisciplinary instruction on undergraduate attitudes and values related to energy issues at the U.S. Naval Academy. Paper presented at: Dupont Summit 2016: Science, Technology, and Environmental Policy; Historic Whittemore House, Washington, DC, December 2.
- Venegas, G.R., Wilson, P.S., Lee, K.M., Ballard, M.S., Reed, A.H., Roosen, E., Ecker, D., Fringer, K., **Smith, J.P.** (2016). Shipboard low frequency sound speed measurements in the New England Mud Patch. Paper presented at: Acoustical Society of America: 171st Meeting of the Acoustical Society of America; Salt Lake City, UT, May 23-27.
- Smith, J.P.** (2016). Tracers and technologies in estuarine systems. Paper presented at: Hart Research Institute for Gulf of Mexico Studies Seminar Series: Texas A&M University – Corpus Christi; Corpus Christi, TX, April 8 (**INVITED**).
- Reed, A.H. and **Smith, J.P.** (2015). Aggregation and disaggregation of flocculated particles with different mineralogy. Poster Session presented at: American Geophysical Union (AGU): 2015 Annual Fall Meeting; San Francisco, CA, December 14-18.
- Brocchini, M., Calantoni, J., Reed, A.H., Sheremet, A., Staples, T., **Smith, J.P.**, Postacchini, M., Braithwaite, E.F., Kooney, T., Lorenzoni, C., Russo, A., Mancinelli, A., Soldini, L., Corvaro, S., Coluccelli, A., and Paoncini, P. (2015). The EsCoSed Project: Summertime-wintertime evolution of the Misa River estuarine environment. Paper presented at: Associazione Italiana di Meccanica Teorica e Applicata (AIMETA 62): Atti del XXII Congresso; Genova, Italy, September 14-17.

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- Smith, J.P.**, Reed, A.H., Boyd, T.J. (2015). Application of an excitation-emission matrix (EEMS) spectroscopy/parallel factor analysis (PARAFAC) model to investigate clay-organic matter interactions in the Misa River Plume. Paper presented at: The EsCoSed Project Workshop; Senigallia, Italy, July 5-7 (**INVITED**).
- Smith, J.P.**, Cragan, J., Muller, A.C., Cary, C.F., Kelly, S.J., Baker, B.H., Kapuschansky, C.J., and Ward, M. (2015). Validation and verification of model predictions for the dispersion of simulated Cs-137 releases in the tidal-fresh Potomac River. Poster session presented at: U.S. Defense Threat Reduction Agency (DTRA): Chemical and Biological Defense Science and Technology (CBD S&T) Conference; St. Louis, MO, May 12-14.
- Lois, K.M., **Smith, J.P.**, Cragan, J., Rose, P.S., and Ward, M. (2015). Validation and verification of model predictions for I-131 transport in the tidal-fresh Potomac River. Poster session presented at: U.S. Defense Threat Reduction Agency (DTRA): Chemical and Biological Defense Science and Technology (CBD S&T) Conference; St. Louis, MO, May 12-14.
- Panek, L.A., **Smith, J.P.**, Gregory, M.J., Brabander, D.J., Besancon, J.R. (2015). Mineralogy, bacterial diversity, and bioavailable trace element loading in the silt/clay fraction of surficial soils from Iraq and Kuwait. Poster session presented at: Society for Environmental Geochemistry and Health: International Conference of the Society of Environmental Geochemistry and Health – United States Section, University of Texas-Arlington; Arlington, Texas, March 30 - April 1 (**INVITED**).
- Smith, J.P.** (2015). Tracers and technologies for coastal environments. Paper presented at: Vietnamese Academy of Science & Technology (VAST), Institute of Environmental Technology (IET): Science and Technology for Marine Coastal Environment; Da Nang, Vietnam, March 16-18 (**INVITED**).
- Smith, J.P.**, Suriben RS, Coffin RB, Boyd TJ, Rose PS, Douglas TA, Millholland LC, Boudart E, Woods J. 2014. Late-summer tundra methane concentrations and fluxes on the North Slope of Alaska. Poster session presented at: American Geophysical Union (AGU): 2014 Annual Fall Meeting; San Francisco, CA, December 15-19.
- Reed, A.H., Gurzynski, W., Zhang, G., **Smith, J.P.** (2014). Comparison of floc growth and stability in four estuarine clay simulations. Poster session presented at: American Geophysical Union (AGU): 2014 Annual Fall Meeting; San Francisco, CA, December 15-19.
- Smith, J.P.** and Reed, A.H. (2013). Uncertainties in floc sizes (nm to mm) from the Pearl River Estuary due to different analytical methods. Paper presented at: American Chemical Society (ACS): 245th ACS National Meeting; New Orleans, LA, April 7-11.
- Smith, J.P.** (2013). Tributaries matter: Investigating biogeochemical cycling of reactive constituents in sub-estuaries of Chesapeake Bay. Paper presented at: Washington College: Center for Environment and Society Lecture Series; Chestertown, MD, January, 23 (**INVITED**).
- Nghiem, S.V., Shepson, P.B., Simpson, W., Perovich, D.K., Sturm, M., Douglas, T., Rigor, I.G., Clemente-Colón, P., Burrows, J.P., Richter, A., Steffen, A., Staebler, R., Obrist, D., Moore, C., Bottenheim, J., Platt, U., Pöhler, D., General, S., Zielcke, J., Fuentes, J.D., Hall, D.K., Kaleschke, L., Woods, J., Hager, C., **Smith, J.P.**, Sweet, C.R., Pratt, K., Custard, K., Peterson, P., Walsh, S., Gleason, E., Saiet, E., Webster, M., Lieb-Lappen, R., Linder, C., and Neumann, G. (2013). Science Progress from the Bromine, Ozone, and Mercury Experiment (BROMEX). Paper presented at: Davos Atmosphere and Cryosphere Assembly: Atmosphere Ocean and Cryosphere Interactions – BCI; Davos, Switzerland, July 8-12.

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- Henderson, G., **Smith, J.P.**, Muller, A.C., Petruncio, E., Gallaher, S., Guth, P., and Smith, D.R. (2012). The United States Naval Academy (USNA) Earth System Science and Policy (ESSP) Track: Preparing future leaders for science-based decision making in the face of uncertainty. Paper presented at: U.S. National Oceanic and Atmospheric Administration (NOAA) 2012: 10th Annual Climate Prediction Applications Science Workshop (CPASW), Climate Services for National Security Challenges; Miami, FL, March 13-15.
- Smith, J.P.**, Muller, A.C., Cragan, J., and Ward, M. (2012). Validation and improvement of model predictions for the dispersion and fate of reactive chemical releases in estuarine systems. Paper presented at: Defense Threat Reduction Agency (DTRA): Joint Science and Technology Office, Chemical, Biological Defense (CBD) 2012 Technical Review; Falls Church, VA, December 3-5 (**INVITED**).
- Kapuschansky, C.J., Muller, A.C., Cary, C.F., and **Smith, J.P.** (2012). Factors influencing seasonal variation in the distribution of reactive and non-reactive metals in a sub-estuary of the Chesapeake Bay. Poster session presented at: Atlantic Estuarine Research Society (AERS): AERS Spring Meeting; Cape May, NJ, March 8-10 (Student Presentation).
- Ellis, A.M., **Smith, J.P.**, Reed, A.H. (2012). Flocculation in the Pearl River Estuary – Sediment particle size variations in a circumneutral pH river system with high colloidal iron. Poster session presented at: American Geophysical Union (AGU)/American Society of Limnology and Oceanography (ASLO): Ocean Sciences Meeting; Salt Lake City, UT, 20-24 February (Student Presentation).
- Luning-Prak, D.J., O'Sullivan, D.W., Eisenberg, M.A., Osburn, C.L., Montgomery, M.T., and **Smith, J.P.** (2011). Photolysis of dinitrotoluene: effects of salinity, nitrate, and humic substances. Paper presented at: Environmental Technology Technical Symposium & Workshop. Proceedings from the SERDP Partners in Environmental Technology Technical Symposium & Workshop; Washington, DC, November 30-December 2.
- Montgomery, M.T., Coffin, R.B., Boyd, T.J., Rose, P.S., and **Smith, J.P.**, Sachsenmaier, L., Mikan, M., and Osburn, C.L. (2011). 2,4,6-Trinitrotoluene (TNT) and aromatic organic matter metabolism by natural bacterial assemblages at estuarine transition zones (ER-2124). Paper presented at: Environmental Technology Technical Symposium & Workshop. Proceedings from the SERDP Partners in Environmental Technology Technical Symposium & Workshop; Washington, DC, November 30-December 2.
- Cary, C.F., Muller, A.C., Kapuschansky, C.J., Cragan, J., Ward, M., and **Smith, J.P.** (2011). Validation of model predictions for the dispersion and fate of reactive chemical releases in a sub-estuary of the Chesapeake Bay. Paper presented at: Defense Threat Reduction Agency (DTRA): 2011 Chemical, Biological Defense (CBD) Conference; Las Vegas, NV, November 14-18 (**INVITED** – Student Presentation; **WINNER BEST COLLABORATIVE RESEARCH PRESENTATION**).
- Montgomery, M.T., Coffin, R.B., Boyd, T.J., **Smith, J.P.**, Walker, S.E., and Osburn, C.L. (2011). 2,4,6-Trinitrotoluene mineralization and bacterial production amongst natural microbial assemblages in coastal sediments. Paper presented at: Battelle Memorial Institute: 6th International Conference on Remediation of Contaminated Sediments; New Orleans, LA, February 7-10.
- Rose, P.S., **Smith, J.P.**, Cochran, J.K., Aller, R.C., Swanson, R.L., and Coffin, R.B. (2011). Medically derived ¹³¹I as a tracer in aquatic environments. Paper presented at: 2011 Goldschmidt Conference. Proceedings of the 2011 Goldschmidt Conference, Mineralogical Magazine 75(3); Prague, Czech Republic, August 14-19; p. 1752.

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- Coffin, R.B., **Smith, J.P.**, and Wood, W. (2010). Biogeochemical evaluation of vertical methane fluxes in the Beaufort Sea Shelf/Slope sediments. Poster session presented at: International Polar Year: Oslo Scientific Conference; Oslo, Norway, June 8-12.
- Coffin, R.B., Hamdan, L., **Smith, J.P.**, and Plummer, R. (2010). A geochemical overview of shallow sediment methane source and cycling on the Alaskan Shelf of the Beaufort Sea. Paper presented at: 7th International Methane Hydrate Research and Development Workshop (Fiery Ice 2010); Wellington, New Zealand, May 10-12.
- Leski, T.A., Gregory, M.J., Malanoski, A.P., **Smith, J.P.**, Glaven, H., Wang, Z., Stenger, D.A., and Lin, B. (2010). Analysis of dust samples from the Middle East using high density resequencing microarray 'RPM-TEI'. Paper presented at: Sensors, and Command, Control, Communications, and Intelligence (C3I) Technologies for Homeland Security and Homeland Defense IX. Proceedings of the International Society for Optics and Photonics (SPIE) 7666; Orlando, FL, April 05; p. 76661E76661E-11.
- Smith, J.P.**, Hamdan, L.J., Plummer, R.E., Millholland, L.C., and Coffin, R.B. (2010). Recent efforts in methane hydrate exploration related to energy and climate change: Geochemical results from the Methane in the Arctic Shelf/Slope (MITAS) Expedition. Paper presented at: U.S. Naval Research Laboratory (NRL) Chemistry Division Symposium; Washington, DC, April 19.
- Rose, K., Johnson, J.E., Reed, A.H., and **Smith, J.P.** (2010). Sedimentology, lithostratigraphy and physical properties of recently acquired shallow piston and vibra cores from the U.S. Beaufort Shelf and Slope, Arctic Ocean. Paper presented at: 2010 American Geophysical Union Ocean Sciences Meeting. Eos Transactions American Geophysical Union 91(26), Ocean Science Meeting Supplement, Abstract PO45C-14; Portland, OR, February, 22-26.
- Smith, J.P.** (2010). Marine methane hydrates: Energy, climate change, and the global carbon cycle. Paper presented at: University of Massachusetts, Boston Spring Seminar Series; Boston, MA, February 3 (**INVITED**).
- Smith, J.P.** (2010). Marine Methane Hydrates: Energy, Climate Change, and the Global Carbon Cycle. Paper presented at: Wellesley College of Geosciences: Chemistry and Environmental Studies Seminar Series; Wellesley, MA, February 2 (**INVITED**).
- Smith, J.P.**, Hamdan, L.J., Wood, W., Reed, A., and Coffin, R.B. (2010). Recent efforts in methane hydrate exploration related to energy and climate change. Paper presented at: Department of Energy NETL Hydrate Program Review; Atlanta, GA, January 29 (**INVITED**).
- Coffin, R.B., Hamdan, L.J., **Smith, J.P.**, Plummer, R., Greinert, J., Rose, K., DeBatist, M.A., and Wood, W. (2009). Preliminary results from the Methane In The Arctic Shelf (MITAS) project on the Alaskan Beaufort Sea shelf – Shallow Sediment Porewater Geochemical Profiles. Paper presented at: 2009 American Geophysical Union Fall Meeting. Eos Transactions American Geophysical Union 90(52), Fall Meeting Supplement, Abstract OS23B-01; San Francisco, CA, December 14-18.
- Rose, K., Johnson, J.E., **Smith, J.P.**, Coffin, R.B., Wood, W.T., Hart, P.E., Greinert, J., and Lorenson, T.D. (2009). The role of geology and shallow lithostratigraphy in the distribution of methane flux through shallow sediments across the Beaufort Shelf of Alaska. Paper presented at: 2009 American Geophysical Union Fall Meeting. Eos Transactions American Geophysical Union 90(52), Fall Meeting Supplement, Abstract OS31A-1179; San Francisco, CA, December 14-18.

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- Smith, J.P.** (2009). Life after GK-12: Networking Session. Paper presented at: National Science Foundation (NSF) GK-12 Annual Meeting; Washington, DC, March 27-29 (**INVITED**).
- Smith, J.P.** (2009). GK-12 Works!: Stories from Alumni. Paper presented at: National Science Foundation (NSF) GK-12 Annual Meeting; Washington, DC, March 27-29 (**INVITED**).
- Smith, J.P.**, Brabander, D.J., Besancon, J.R., Millholland, L.C., Gregory, M.J., and Coffin, R.B. (2009). Mineralogy, bacterial species diversity, and bioavailable trace-element loading on the silt/clay fraction of surficial sands from Iraq and Kuwait. Paper presented at: Association Internationale pour l'Etude des Argiles (AIPEA): 14th International Clay Conference; Castellaneta Marina, Italy, June 14-20.
- Montgomery, M.T., Boyd, T.J., **Smith, J.P.**, Walker, S.E., and Osburn, C.L. (2009). 2,4,6-Trinitrotoluene mineralization and incorporation by natural bacterial assemblages in the coastal ecosystems. Paper presented at: American Chemical Society (ACS): The 237rd American Chemical Society (ACS) National Meeting, 2009 Technical Program; Salt Lake City, UT, March 22-26.
- Smith, J.P.**, Gregory, M.J., Brabander, D.J., Millholland, L.C., and Besancon, J.R. (2008). Size-Specific Characterization of Sands and Dust Collected from Iraq and Northern Kuwait: Factors Influencing Bacterial Species Composition and Trace Element Bioavailability. Poster session presented at: 2009 American Geophysical Union Fall Meeting. Eos Transactions American Geophysical Union 89(53), Fall Meeting Supplement, Abstract OS23B-01; San Francisco, CA, December 15-19.
- Montgomery, M.T., Boyd, T.J., **Smith, J.P.**, Walker, S.E., and Osburn, C.L. 2008. Bacterial mineralization and incorporation of 2,4,6-Trinitrotoluene (TNT), RDX, and HMX in the coastal waters and sediments. Poster session presented at: Environmental Technology Technical Symposium & Workshop. Proceedings from the SERDP Partners in Environmental Technology Technical Symposium & Workshop; Washington, DC December 2-4 (**INVITED**).
- Smith, J.P.** (2008). Iodine-131, Beryllium-7, and other biogeochemical tracers for investigating tidal-to-yearly scale sediment accumulation in New York Harbor. Paper presented at: Fall 2008 Chesapeake Biological Laboratory (CBL) Distinguished Scholar Seminar Series: University of Maryland Center for Environmental Science (UMCES); Solomons, MD, October 29 (**INVITED**).
- Smith, J.P.** (2008). Using Naturally-Occurring and Anthropogenically-Produced Gamma-Emitting Radionuclide Tracers to Investigate Sedimentological Processes in Aquatic Systems. Paper presented at St. Mary's College Chemistry Seminar; St. Mary's, MD, October 29 (**INVITED**).
- Smith, J.P.**, Hamdan, L.J., Wood, W.T., and Coffin, R.B. (2007). Geologic controls on porewater geochemistry in gas hydrate bearing sediments in the Gulf of Mexico. Poster session presented at: 2007 American Geophysical Union Fall Meeting. Eos Transactions American Geophysical Union 88(52), Fall Meeting Supplement, Abstract OS23A-1063; San Francisco, CA, December 10-14.
- Coffin, R.B., Hamdan, L.J., Wood, W.T., Pohlman, J., **Smith, J.P.**, Henrys, S., and Pecher, I. (2007). Estimates of vertical methane fluxes in Porangahau Ridge sediment on the Hikurangi Margin, New Zealand. Paper presented at: 2007 American Geophysical Union Fall Meeting. Eos Transactions American Geophysical Union 88(52), Fall Meeting Supplement, Abstract OS21A-04; San Francisco, CA, December 10-14.

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- Benedict, L.A., Bopp, R.F., Chillrud, S.N., Chaky, D.A., **Smith, J.P.**, and Olsen, C.R. (2007). Polybrominated diphenyl ether (PBDE) levels, signatures and sources in the lower Hudson River basin. Paper presented at: American Chemical Society 233rd National Meeting & Exposition. The 233rd ACS National Meeting (2007) Technical Program: ENVR 178; Chicago, IL, March 25-29.
- Smith, J.P.**, Bullen, T.D., Brabander, D.J., Gontz, A.M., and Olsen, C.R. (2007). Strontium isotope record of seasonal scale variations in sediment sources and sediment trapping in low-energy subtidal areas of the lower Hudson River estuary. Paper presented at: Geological Society of America (GSA) Northeastern Section, 42nd Annual Meeting. Geological Society of America Abstracts with Programs 39(1), Abstract 36-5; University of New Hampshire, Durham, NH, March 12-14.
- Gontz, A.M., Fleming, H., and **Smith, J.P.** (2007). Paleo-drainage system of the Neponset River, Boston Harbor, MA. Poster session presented at: Geological Society of America (GSA) Northeastern Section, 42nd Annual Meeting. Geological Society of America Abstracts with Programs 39(1), Abstract 35-5; University of New Hampshire, Durham, NH, March 12-14.
- Maio, C.V., Gontz, A.M., Mastone, V.T., and **Smith, J.P.** (2007). Geophysical assessment of the wreck of the USS *Niagra*, Boston Harbor, MA. Poster session presented at: Geological Society of America (GSA) Northeastern Section, 42nd Annual Meeting. Geological Society of America Abstracts with Programs 39(1), Abstract 19-4; University of New Hampshire, Durham, NH, March 12-14.
- Smith, J.P.**, Olsen, C.R., Gontz, A.M., Benedict, L.A., Bopp, R.F., Pleil, J.D., Funk, W.E., and Rappaport, S.M. (2006). Conducting environmental forensics in dynamic, highly urbanized estuarine systems: Lessons learned from investigating the impact of the World Trade Center attack on the sediments of New York Harbor. Paper presented at: Geological Society of America (GSA) Northeastern Section, 41st Annual Meeting. Geological Society of America Abstracts with Programs 38(2), Abstract 27-5; Camp Hill/Harrisburg, Pennsylvania, March 20-22.
- Smith, J.P.**, Olsen, C.R., Shopis, A., Zhu, J., Greene, S., and Chen, R.F. (2006). Geoscience education success stories from the Watershed Integrated Sciences Partnership (WISP) and the Boston Science Partnership (BSP). Paper presented at: Geological Society of America (GSA) Northeastern Section, 41st Annual Meeting. Geological Society of America Abstracts with Programs 38(2), Abstract 9-11; Camp Hill/Harrisburg, Pennsylvania, March 20-22.
- Gontz, A.M., **Smith, J.P.**, Li, L., Wallace, G.T., Olsen, C.R., and Pala, F. (2006). Hey, where did that come from? – A combined geochemical and geophysical approach to sediment transport dynamics. Paper presented at: Geological Society of America (GSA) Northeastern Section, 41st Annual Meeting. Geological Society of America Abstracts with Programs 38(2), Abstract 27-6; Camp Hill/Harrisburg, Pennsylvania, March 20-22.
- Smith, J.P.**, Boyd, T.J., Osburn, C.L., and Olsen, C.R. (2005). Investigating the impact of a major storm event on the sediments of Chesapeake Bay using Beryllium-7. Paper presented at: 2005 American Society of Limnology and Oceanography (ASLO) Summer Meeting: Abstract SS78.10; Santiago de Compostela, Spain, June 19-24.
- Smith, J.P.** and Olsen, C.R. (2005). Iodine-131: A short-lived, anthropogenic radionuclide tracer in urbanized estuarine systems. Poster session presented at: Association for Environmental Health and Sciences Foundation: 2005 AEHS Meeting and West Coast Conference on Soils, Sediments and Water; San Diego, CA, March 21-24.

Joseph P. Smith, Ph.D.

- Pala, F., Li, L., **Smith, J.P.**, and Wallace, G.T. (2005). Application of a dynamic equilibrium model in the interpretation of the sediment/water distribution of copper and lead in Chesapeake Bay. Paper presented at: 2005 American Society of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting: Abstract TS48.12; Salt Lake City, UT, February 20-25.
- Montgomery, M.T., **Smith, J.P.**, Boyd, T.J., and Osburn, C.L. (2004). Effect of benthic community change on bacterial PAH metabolism in anthropogenically impacted estuarine sediments. Poster presented at: 2004 American Society of Limnology and Oceanography (ASLO) Summer Research Conference: Abstract SS02.1; Savannah, GA June 13-18.
- Smith, J.P.**, Oktay, S.D., Brabander, D.J., Bullen, T.D., and Olsen, C.R. (2004). Geochemical evidence for seasonal-scale variations in sediment accumulation in abandoned harbor slips of the lower Hudson River estuary. Poster session presented at: American Society of Limnology and Oceanography (ASLO)/The Oceanography Society (TOS) 2004 Ocean Research Conference: Abstract SS15.5-252; Honolulu, Hawaii, February 15-20.
- Brabander, D.J., Oktay, S.D., **Smith, J.P.**, Kada, J., Bullen, T.D., and Olsen, C.R. (2002). Geochemical fingerprinting of the World Trade Center attack in New York Harbor sediments. Poster session presented at: 2002 American Geophysical Union Fall Meeting. Eos Transactions American Geophysical Union 83(47), Fall Meeting Supplement, Abstract OS22B-0278; San Francisco, CA, December 6-10.
- Smith, J.P.**, Oktay, S.D., Brabander, D.J., Olsen, C.R., and Kada J. (2002). Temporal movement of the geochemical “fingerprint” of the World Trade Center terrorist attack in New York Harbor sediments. Poster session presented at: 2002 American Geophysical Union Fall Meeting. Eos Transactions American Geophysical Union 83(47), Fall Meeting Supplement, Abstract OS22B-0279; San Francisco, CA, December 6-10.
- Oktay, S.D., **Smith, J.P.**, Brabander, D.J., Kada, J., and Olsen, C.R. (2002). Spatial distributions of Iodine-131 and the geochemical “fingerprint” from the World Trade Center terrorist attack in New York Harbor sediments. Poster session presented at: 2002 American Geophysical Union Fall Meeting. Eos Transactions American Geophysical Union 83(47), Fall Meeting Supplement, Abstract OS22B-0280; San Francisco, CA, December 6-10.
- Smith, J.P.**, Oktay, S.D., Olsen, C.R., Kada, J., and Brabander, D.J. (2002). Short-term sediment dynamics in the lower Hudson River estuary: Identifying the impact of the World Trade Center terrorist attack. Paper presented at: 2002 American Geophysical Union (AGU)/American Society of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Eos Transactions American Geophysical Union 83(4), Ocean Sciences Meeting Supplement, Abstract OS22S-06; Honolulu, HI, February 11-15.
- Smith, J.P.**, Crawford, C., Olsen, C.R., and Oktay, S.D. (2001). Boston Harbor Watershed: Using database and GIS tools to communicate and manage water quality issues. Poster session presented at: 2002 American Geophysical Union (AGU) Spring Meeting. Eos Transactions American Geophysical Union 82(20), Spring Meeting Supplement, Abstract H42A-13; Boston, MA, May 28-31.

GRANTS AND FELLOWSHIPS

- \$150K (2023) Defense Threat Reduction Agency (DTRA), “Validation, Verification, and Improvement of Model Predictions for Waterborne Chemical Releases in Coastal Systems”

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- \$687K (2018-2022, co-PI) Strategic Environmental Research and Development Program (SERDP), “USNA Polar Science and Technology Program (PS&TP) North Slope Material Flux Study.”
- \$35K (2020-2022, co-PI) U.S. Office of Naval Research, Code 32, “USNA Faculty Support for AMS Project Ocean”
- \$181.5K (2019-22) Defense Threat Reduction Agency (DTRA), “Validation, Verification, and Improvement of Model Predictions for Waterborne Chemical Releases in Coastal Systems”
- \$45K (2018-2022) Naval Research Lab Code 6138, 2018, “Project support for the DLA Chlorination/De-Chlorination program.”
- \$200K (2017, co-PI) Navy Energy Coordination Office (OPNAV N45E), “Interdisciplinary and Interdivisional Energy Analysis, Policy, and Security Education at USNA”
- \$70K (2017) National Aeronautics and Space Administration (NASA), “USNA Participation in Operation Ice Bridge”
- \$150K (2016-18) Defense Threat Reduction Agency (DTRA), “Continued Validation and Improvement of Model Predictions for the Dispersion and Fate of Reactive Chemical Releases in Estuarine Systems”
- \$50K (2016) National Aeronautics and Space Administration (NASA), “USNA Participation in Operation Ice Bridge”
- \$35K (2016) Office of Naval Research, Code 32, Arctic and Global Predictions Program, “U. S. Naval Academy Polar Science and Technology (USNA-PS&T) Program”
- \$57K (2015, co-PI) Chief of Naval Operations Energy and Environmental Readiness Division,
- “Interdisciplinary and Interdivisional Energy Analysis, Policy, and Security Course at USNA” \$30K (2015) Language Proficiency, Regional Expertise, Cultural Awareness (LREC) Program trip to Vietnam (March 2015), “Science, Policy, and Culture in Vietnam”
- \$25K (2015) Office of Naval Research, Code 32, Arctic and Global Predictions Program, “U. S. Naval Academy Polar Science and Technology (USNA-PS&T) Program”
- \$68K (2014-15) Defense Threat Reduction Agency (DTRA), “Continued Validation and Improvement of Model Predictions for the Dispersion and Fate of Reactive Chemical Releases in Estuarine Systems”
- \$56K (2014) Language Proficiency, Regional Expertise, Cultural Awareness (LREC) Program trip to Vietnam (July-August 2014), called, “Science, Policy, and Culture in Vietnam”
- \$10K (2014) Junior Naval Academy Research Council (JNARC), “pH Effects on Clay-Biopolymer and Clay-Clay Flocculation Processes in River-Estuary-Coastal Systems
- \$10K (2012-2013) USNA, Navy Estuarine & Coastal Observation System (NECOS)
- \$133K (2012-2013) Defense Threat Reduction Agency (DTRA), “Continued Validation and Improvement of Model Predictions for the Dispersion and Fate of Reactive Chemical Releases in Estuarine Systems”
- \$11.5K (2011-2013) 2011/12 DTRA Chemical and Biological Technologies Service Academy Research Initiative

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- ~ \$200K/year (2007-2011, Co-PI) National Geospatial Intelligence Agency (NGA), U.S. Naval Research Laboratory (Code 6114), “Elemental and Isotopic Tracking”
- \$70K/year, (2007-2009) National Research Council, Research Associateship Program
- \$1K - 2006 University of Massachusetts, Boston, Graduate Student Assembly, Bollinger Grant
- \$5K (3 months) 2005 National Science Foundation, East Asia Pacific Summer Institute Fellowship
- \$25K, (1 year, 2004) National Science Foundation, Watershed Integrated Science Partnership Fellowship

ACTIVITIES AND AFFILIATIONS

- Affiliated (Adjunct) Visiting Research Scholar at Washington College, Center for Environment and Society
- Affiliated (Adjunct) Assistant Professor, School of Marine Science and Policy, College of Earth, Ocean, and Environment, University of Delaware
- U.S. Office of Naval Research/American Meteorological Society (AMS) Maury Project guest lecturer (2011-2018); Co-Chairman (2019)
- Geochemical Society (2022-Present)
- American Geophysical Union (AGU) - Member (2001-Present)
- American Chemical Society (ACS) – Member (2012-2023)
- Geological Society of America (GSA) - Member (2005-2010)
- Association of Environmental Health and Science (AEHS) - Member (2004-2006)
- American Society of Limnology and Oceanography (ASLO) - Member (2001-2007)
- Reviewer for National Science Foundation (NSF), Division of Earth Sciences Instrumentation and Facilities Program and Division of Ocean Sciences Ocean Education Program and Arctic Observing Network Program
- Reviewer for Journal(s), *Science of the Total Environment*, *Journal of Environmental Radioactivity*, *Energies*, *Marine Chemistry*, *Oceanography*, *Journal of Marine Science and Engineering*

ACADEMIC COURSES

- SO273: Applied Earth Systems Science
- SO351: Biogeochemical Oceanography
- SP411: Underwater Acoustics and Sonar
- SO427: Introduction to Estuarine Oceanography
- SO445: Global Climate Change
- SO470: Project-Based Capstone Seminar in Oceanography
- SO485: Energy Analysis. Policy, and Security
- SO485/6X: Ocean Acoustics
- SO495/6: Oceanography Research Projects
- SO475/6: Readings in Oceanography and Meteorology
- SO505/6: Honors Independent Research

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STUDENT RESEARCH PROJECTS (Undergraduate)

- 2023 – (w/ CAPT Shawn G. Gallaher, PhD) “Rare Earth Element Chemistry in Surface Waters of Rivers and Streams on the North Slope of Alaska”, Midshipman 1/C Mary A. Rogers
- 2023 – (w/ CAPT Shawn G. Gallaher, PhD) “Summertime Particulate Fluxes in the Sagavanirktok River on the North Slope of Alaska”, Midshipman 1/C Sarah M. Blank
- 2022 – (w/ Mr. Benjamin Hickman) “Optical Tracking of a Chemical Plume in the Surface Waters of a Shallow Water Estuarine System Using a Custom Autonomous Surface Platform”, Midshipman 1/C Megan Lamendola
- 2022 – (w/ Mr. Benjamin Hickman) “A Cost-Effective, Scaled-Down Testing Unit for the Optimization of Pierside Chlorination to Reduce or Control Biofouling in Submarine Seawater Systems at Pearl Harbor Naval Shipyard”, Midshipman 1/C Jennifer C. Chatwell
- 2022 – (w/ Instructor Alexander Davies) “A Regression Model to Predict Total Suspended Solid Concentrations in the Severn River, MD”, Midshipman 1/C Alexander V. Schuerch
- 2022 - (w/ CAPT Shawn G. Gallaher) “Thaw Season Constituent Fluxes Through Arctic Rivers to Alaskan North Slope Coastal Waters”, Midshipman 1/C Bryce Foxen
- 2021 – (w/ Instructor Brianna Tracy) “Spatial Distribution of Microplastics and Synthetic Particulates in the Severn River and Annapolis Harbor”, Midshipman 1/C Mary McClellan H. Hess
- 2021 – (w/ Dr. Brad Barrett and Instructor Alexander Davies) “Subseasonal Variability of Surface Ocean Currents in the Bay of Bengal”, Midshipman 1/C Cody P. Spedero
- 2021 – “Seasonal Variability in Material Fluxes Through Rivers and Streams on the North Slope of Alaska”, Midshipman 1/C Haven Cofer
- 2021 – (w/ Instructor Alexander Davies) “Application of Machine Learning Methods to Better Quantify Water-Level Anomalies in Annapolis, MD”, Midshipman 1/C Forest Wan
- 2020 – “The U.S. Naval Academy Polar Science & Technology Program 2019 Alaska North Slope Material Flux Study (AKMFS): Spring-to-Late Summer Variability in Iron and Carbon Fluxes Through Small Rivers”, Midshipman 1/C Emily Doyle
- 2020 - “System for Hazard Assessment of Released Chemicals (SHARC) Model Validation and Verification Studies: Improvement of Model Predictions for Chemical Releases in Dynamic Estuarine Systems”, Midshipman 1/C Matthew McClelland
- 2019 - “The U.S. Naval Research Laboratory (NRL) and Pearl Harbor Naval Shipyard (PHNSY) Chlorination/ Dechlorination System Project: Evaluation of Chemical Agents”, Midshipman 1/C John Patrick Caniban
- 2019 - (w/ Instructor Alexander Davies) “Local-scale Water Level Differences and Meteorological Drivers in Annapolis, MD”, Midshipman 1/C George W. Davis
- 2019 - “Measuring Water-Quality of the Lower Severn River Using an Autonomous Surface Kayak”, Midshipman 1/C Richmond Paschall
- 2018 - “Reconstruction of a Long-Term Storm Frequency Index at the Site of the Historic World War I Shipwreck of the USS. San Diego (ACR-6)”, Midshipman 1/C Nolan T. Brandon

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- 2018 - “Development of Algorithms for the Detection and Identification of Bottom-Moored Objects from Sidescan Sonar Imagery”, Midshipman 1/C Timothy C. Abunike
- 2018 - “The Coastal Kayak Autonomous Surface Vehicle (ASV) Version 2.0”, Midshipman 1/C Tong K. Ma (Ocean Engineering)
- 2017 - “Exploring the use of Commercial Off-the-Shelf (COTS) Unmanned Quadcopters to Identify and Characterize Ice Surface Features”, Midshipman 1/C Colton L. Byers
- 2017 - “Mapping of Coastal Reef Systems Using an Autonomous Surface Kayak”, Midshipman 1/C Bryan A. Laboy
- 2016 - “Development of Sediment Grain Size Maps from Sidescan Surveys of the Lower Severn River, Maryland”, Midshipman 1/C Margo S. Darragh
- 2016 - “Seasonal Evolution of a Near-Surface Temperature Maximum (NSTM) in the Marginal Ice Zone (MIZ) of the Beaufort Sea from 2012-2013”, Midshipman 1/C Alyson C. Eng
- 2015 - “Optical Characterization of the South River Estuary, MD Through EEMS/PARAFAC Analysis”, Midshipman 1/C Michael S. Fuller Jr.
- 2015 - “Validation and verification of model predictions for I-131 transport in the tidal-fresh Potomac River”, Midshipman 1/C Kevin M. Lois
- 2015 - “Mineralogy, Bacterial Diversity, and Bioavailable Trace element Loading in the Silt/Clay Fraction of Surficial Soils from Iraq and Kuwait”, Midshipman 1/C Louis A. Panek
- 2014 - “Spatial Variations in Late Summer Tundra Methane Flux on the North Slope of Alaska”, Midshipman 1/C Rizalina Suriben
- 2014 - “Potential Legacy of Heavy Metal Contamination in the Sediments of Former Sewage Holding Ponds at Otter Point Creek, MD”, Midshipman 1/C Benjamin Ziemski
- 2013 - “Validation and Verifications of Model Predictions for ^{137}Cs Fate and Transport in the Tidal Fresh Potomac River” – Midshipman 1/C Samuel Kelly (App. Phys.)
- 2013 - “Optical Brighteners as a Wastewater Plume Tracer in Estuarine Systems”, Midshipman 1/C Benjamin Baker (App. Phys.)
- 2013 - “Scale Matters: The Need for a Customizable Autonomous Research Platform for Estuarine Research”, Midshipman 1/C Scott Stamer
- 2013 - “A Science, Technology, Engineering, and Mathematics Lesson Plan for Use in Teaching Water Quality Concepts in China”, Midshipman 1/C Claire Fletcher
- 2012 - “Influence of Different Organic Matter Loading on Ambient Bacteria in Brackish ‘Challenge’ Water Stored in Small-scale, Simulated Ballast Water Tanks”, Midshipman 1/C Jacqueline I. Fisher
- 2012 - “Validation of Model Predictions for the Dispersion of Reactive Chemical Releases in a Sub-estuary of the Chesapeake Bay”, Midshipman 1/C Cynthia F. Cary
- 2012 - “Flocculation in the Pearl River Estuary – Particle Size Variations in a Circumneutral pH River System with High Colloidal Iron”, Midshipman 1/C Abigail M. Ellis
- 2012 - “Assessing the Plausibility of Hough Transforms for Automated Detection of Biofouling and its Associated Agents”, Midshipman 1/C M. Jordan Davidson
- 2012 - “A Wavelet Approach to the Combined Effects of the North Atlantic Oscillation and Arctic Oscillation on Arctic Sea Ice Extent”, Midshipman 1/C Allen J. Lucas

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- 2011 - "Application of Shallow Sediment Geochemical and Geophysical Data to Infer Methane Flux from Methane Hydrate Bearing Strata in Alaminos Canyon, Gulf of Mexico", Midshipman 1/C Tracy Fridye

STUDENT CAPSTONE PROJECTS (Undergraduate)

2023 Project-Based Oceanography Capstone Research:

- (w/ Mr. Benjamin Hickman and Instructor Alexander R. Davies) "Analysis of Tide Propagation Along the Main Stem Severn River Over a Neap-Spring Cycle", Midshipman 1/C Julia A. Galbraith, Midshipman 1/C Autumn Y. Nicholas, and Midshipman 1/C Sophie E. Shelbourne
- (w/ Mr. Benjamin Hickman) "Sedimentological and Geophysical Survey along the USNA Seawalls from Hospital Point to Trident Light", Midshipman 1/C Robert W. Archambault, Midshipman 1/C Ryan M. Craft, and Midshipman 1/C Lucas A. Schatz
- (w/ Mr. Benjamin Hickman) "Local-Scale Forcing Effects on Rhodamine Dye Plume Dispersion and Transport in Carr Creek Cove", Midshipman 1/C Alexander K. Khieu, Midshipman 1/C Zane L. Richardson, and Midshipman 1/C Alexandra Urbine
- (w/ Mr. Benjamin Hickman) "Side Scan Sonar Detection of Bottom-Mounted Objects with Different Material Properties", Midshipman 1/C Julianne K. Barkholz and Midshipman 1/C Andrew B. Matthews
- (w/ Dr. Scott Loeffler and Instructor Alexander R. Davies) "Reconstruction of Meteorological Conditions Leading up to the September 2021 Annapolis, MD", Midshipman 1/C Wyatt M. Morris and Midshipman 1/C Christina A. Null
- (w/ Instructor Brianna M. Tracy and Mr. Benjamin Hickman) "Winter-to-Spring Primary Productivity and Zooplankton Abundance in Santee Basin and College Creek", Midshipman 1/C Nyla Chambers, Midshipman 1/C Maggie Cleary, Midshipman 1/C Eloise Gebert, and Midshipman 1/C Stephanie Jacobs

2022 Project-Based Oceanography Capstone Research Posters:

- (w/ Instructor Brianna M. Tracy and Mr. Benjamin Hickman) "Early Spring Conditions in Santee Basin and Potential for Blooms of Harmful Dinoflagellate Species", Midshipman 1/C Stella E. Blackwell, Midshipman 1/C Morgan P. Lang, Midshipman 1/C Antonio T. Orama, Midshipman 1/C Sarah P. Ryser
- (w/ Instructor Alexander R. Davies and Mr. Ben Hickman) "Measurement of the Wintertime Optical Properties of the Severn River", Midshipman 1/C Brandon N. Jordan, Midshipman 1/C Daniel H. Taylor, and Midshipman 1/C Deondrae C. Williams
- (w/ Instructor Brianna M. Tracy) "Quantifying Variability in Wintertime Microplastic Concentrations and Particle Counts in Annapolis Harbor", Midshipman 1/C Gustel M. Bamanabio, Midshipman 1/C Brycen H. Groess, Midshipman 1/C Andrea C. Martinez, and Midshipman 1/C Alexandra K. Schofield
- (w/ Instructor Alexander R. Davies) "Analysis of Water Level Differences Between Annapolis Harbor and the Severn River", Midshipman 1/C Cailin M. Duffy, Midshipman 1/C Ciera L. Hertelendy, and Midshipman 1/C Sierra E. Averill

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- (w/ Mr. Benjamin Hickman) "Wind-Forcing and Waves in Carr Creek and the Mouth of the Severn River", Midshipman 1/C Frank W. Bell, Midshipman 1/C Kelsey M. Cyrus, and Midshipman 1/C Langston A. Arnold
- (w/ Mr. Benjamin Hickman) " Tidal Current Response to Water Levels in College Creek", Midshipman 1/C Airi Y. Sloan, Midshipman 1/C Anna C. Kovacs, Midshipman 1/C Benjamin H. Hassen, and Midshipman 1/C LeGrand S. Pound
- (w/ Mr. Benjamin Hickman) "Tracing a Wastewater Effluent Plume in Carr Creek", Midshipman 1/C Sydney Dinan, Midshipman 1/C Tanner Gage, Midshipman 1/C Phillip Lee, and Midshipman 1/C Meghan Sculli
- (w/ Instructor Brianna M. Tracy and Mr. Benjamin Hickman) "Geophysical Survey and Sedimentological Assessment of the EagleNest Point Oyster Reef Restoration Site in Round Bay", Midshipman 1/C Megan Gephart, Midshipman 1/C Braydon Hammond, Midshipman 1/C Richard Hansen, and Midshipman 1/C Cory Routen

2020 Project-Based Oceanography Capstone Research Posters:

- (w/ Instructor Alexander Davies) "Measurement of the Optical Properties of Severn River Surface Waters with an Autonomous Underwater Vehicle", Midshipman 1/C Daniel C. McDonald and Midshipman 1/C Jordan J. Neal
- (w/ Dr. Brad Barrett and Instructor Alexander Davies) "Sub-seasonal Variability of Ocean Currents and Chlorophyll-a in the Bay of Bengal", Midshipman 1/C Diego Caballero and Midshipman 1/C James Swanson
- "Optimization of Chlorination/Dechlorination to Reduce or Control Biofouling in Shipboard Systems", Midshipman 1/C Pia Mackie, Midshipman 1/C Brennen Means, and Midshipman 1/C Lauren Vernazza
- (w/ Instructor Brianna Tracy) "Sampling and Quantification of Microplastics and Other Synthetic Particles in the Severn River", Midshipman 1/C Abby Ebersole, Midshipman 1/C Caroline Kelly, and Midshipman 1/C Meer Syamansoori
- "Decadal-to-Annual Scale Trends in Regional Arctic Late-Summer Sea Ice Extent", Midshipman 1/C Luke Cota, Midshipman 1/C Samantha Fox, and Midshipman 1/C Madison Runge
- "Optimization of Side Scan Sonar Images for the Identification of Bottom-Mounted Objects in Shallow Coastal Marine Waters" - Midshipman 1/C Candace Gordon, Midshipman 1/C James K. Kirby, and Midshipman 1/C Connor Knowles

2019 Project-Based Oceanography Capstone Research Posters:

- (w/ Instructor Andrew Keppel) "Coastal Nuisance Flooding of the USNA Columbarium, College Creek, Annapolis, MD", Midshipman 1/C Lauren E. Greenberg and Midshipman 1/C Allison R. Warnimont
- (w/ Instructor Alexander Davies) "Cross-Channel Assessment of Severn River Watershed Observatory Current and Water Quality Data Using Unmanned and Autonomous Platforms", Midshipman 1/C Kristy A. Lehmer and Midshipman 1/C Matthew E. Spelich
- "Wintertime Wave Activity Along the U.S. Naval Academy Farragut Seawall", Midshipman 1/C Greg L. Gruseck and Midshipman 1/C Darby J. Minton

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- (w/ Instructor Andrew Keppel) "Measurement of Wintertime Primary Production in the Lower Severn River", Midshipman 1/C Paige L. Brigham and Midshipman 1/C Lucia K. Donnelly

2018 Project-Based Oceanography Capstone Research Posters:

- (w/ Instructor Andrew Keppel) "Assessment of Coastal Processes Affecting Beach Morphology at Sandy Point State Park, MD", Midshipman 1/C Garrett L Barrios and Midshipman 1/C Gage A Butler
- (w/ Instructor Alexander Davies) "Validation of a Four-Component Nutrient, Phytoplankton, Zooplankton, and Detritus (NPZD) Model for the Mesohaline Chesapeake Bay", Midshipman 1/C Michael J. Cassano, Midshipman 1/C Jenna Jones, and Midshipman 1/C Shae Timmons
- "Development of High-Resolution Sediment Grain Size and Non-Cohesive Sediment Erodibility Maps for the Lower Severn River", Midshipman 1/C Kellyanne M. Hurst and Midshipman 1/C Emily G. Ranzau
- (w/ Instructor Alexander Davies) "Evaluation of Physiochemical Contours in the Lower Severn River Developed from Measurements by an EcoMapper Autonomous Underwater Vehicle (AUV)", Midshipman 1/C Patrick D. Francis and Midshipman 1/C Jessie E. Sharp
- (w/ Instructor Alexander Davies) "Comparison of Relative Water Levels at the U.S. Naval Academy and Annapolis City Dock in Response to Local Meteorological Forcing Conditions", Midshipman 1/C Hayden P. Spalding and Midshipman 1/C Ben R. McGrath