NAME **CHEN XU**
Department Oceanography and Marine Sciences
Institution Texas A&M University
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PROFESSIONAL PREPARATION

- Undergraduate Institution: Xiamen University, P. R. China; Major: Environmental Science; Degree & Year: 2004
- Graduate Institution: Texas A&M University, USA; Major: Oceanography; Degree & Year: MS: 2007 (*GPA: 4.0*); PhD: 2011 (*GPA: 4.0*)
- Postdoctoral Institution: Texas A&M University; Area: Environmental biogeochemistry and radiochemistry; Dates: 2011-2012
- Assistant Research Scientist: Texas A&M University; Area: Environmental biogeochemistry and radiochemistry; Dates: 2012-9/2017
- Associate Research Scientist: Texas A&M University; Area: Environmental biogeochemistry and radiochemistry; Dates: 9/2017-present

TEACHING EXPERIENCE

Teaching assistant and instructor for CHEM Lab 119 and 120 regular and honor classes since 2021 Fall to present.
Invited lecturer for graduate courses in the Oceanography Department at Texas A&M University,

- OCNG644 "Isotope Geochemistry",
- OCNG646 “Dynamics of Environmental Colloids”,

Invited lecturer for undergraduate courses at Texas A&M University at Galveston,

- MARS481 “Seminar in Marine Science”
- CHEM383 "Environmental Chemistry"

Data Analysis Skills

- Excel, Excel macro, Matlab, etc. with >15 years of experience in processing oceanographic data and mass spectrometry data.

Training and Instrumentation

- Basic laboratory procedures
- Microbial cultures and phytoplankton culturing
- Ultrafiltration techniques
- Radiochemistry Instrumentation (liquid scintillation counter, alpha, beta, and gamma counters)
- GC-EI-MS, GC-FID
- ATR-FTIR
- Atomic Absorption Spectrometer and Inductively Coupled Plasma Mass Spectrometer (ICP-MS) Thermo X series II
- PerkinElmer CHNO/S Analyzer
- Shimadzu TOC-L Analyzer
- Waters HPLC
- Gel electrophoresis
- Nuclear Magnetic Resonance (NMR) and Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry (ESI-FTICRMS).

PUBLICATIONS (A TOTAL NUMBER OF 92, *resulting in an overall h-index of 32*):

1. **Xu, C.**, Goranov, A.I., Kaplan, D.I., Lin, P., Yeager, C.M., Patterson, N., Jiang, H., Hatcher, P.G. and Santschi, P.H. 2024. Molecular features of uranium-binding natural organic matter in a riparian wetland determined by ultrahigh resolution mass spectrometry. Science of The Total Environment 948, 174867.
2. Santschi, P.H., **Xu, C.**, Lin, P., Yeager, C.M., Hazenberg, P., Kaplan, D.I. 2024. Hydrological controls of a riparian wetland based on stable isotope data and model simulations. Isotopes in Environmental & Health Studies. Accepted.
3. Chin, W.-C., Santschi, P.H., Quigg, A., **Xu, C.**, Lin, P., Kamalanathan, M. 2024. Micro- and Nano-Plastics Induced Release of Protein-Enriched Microbial Exopolymeric Substances (EPSs) in Marine Environments. Environments. Accepted.
4. Kaplan, D.I., Boyanov, M.I., Losey, N.A., Lin, P., **Xu, C.**, O'Loughlin, E.J., Santschi, P.H., Xing, W., Kuhne, W.W. and Kemner, K.M. 2024. Uranium Biogeochemistry in the Rhizosphere of a Contaminated Wetland. Environmental Science & Technology 58(14), 6381-6390.
5. Lin, P., **Xu, C.**, Kaplan, D.I., Yeager, C.M., Xing, W., Nichols, R., Santschi, P.H. 2023. Presence of organic matter and its characterization in cementitious materials: Implications for radionuclide immobilization, J. Env. Radioactivity, 263 (2023) 107183.
6. Grandbois, R.H., Santschi, P.H., **Xu, C.**, Mitchell, J.M., Kaplan, D.I., Yeager, C.M. 2023. Iodide uptake by forest soils is principally related to the activity of extracellular oxidases. Frontiers in Chemistry, Radioiodine Detection and Management, Front. Chem. 11:1105641. doi: 10.3389/fchem.2023.1105641. 298.
7. Kaplan, D.I., Nichols, R., **Xu, C.**, Lin, P., Yeager, C.M., Santschi, P.H. 2022. Large seasonal fluctuations of groundwater radioiodine speciation and concentrations in a riparian wetland in South Carolina. STOTEN, in press, https://doi.org/10.1016/j.scitotenv.2022.151548. 294.
8. **Xu, C.**, Lin, P., Garimella, R., Li, D., Xing, W., Patterson, N., Kaplan, D.I., Yeager, C.M., Hatcher, P.G., Santschi, P.H. 2022. ^{1}H-^{13}C heteronuclear single quantum coherence NMR evidence for iodination of natural organic matter influencing organo-iodine mobility in the environment. STOTEN, in press, https://doi.org/10.1016/j.scitotenv.2022.152546. 295.
9. Santschi, P.H., Chin, W.C., Quigg, A., **Xu, C.**, Kamalanathan, M., Lin, P. **2021**. Marine gel interactions with hydrophilic and hydrophobic pollutants. Gels; Special Issue on Marine Gels, Gels 2021, 7, 83. https://doi.org/10.3390/gels7030083
10. Quigg, A.; Santschi,P.H.; Burd, A.; Chin, W.-C.; Kamalanathan, M.; **Xu, C.**; Ziervogel, K.**2021** From Nano-Gels to Marine Snow: A Synthesis of Gel Formation Processes and Modeling Efforts Involved with Particle Flux in the Ocean. Gels 2021, 7,114. https://doi.org/10.3390/ gels7030114.
11. Quigg A, Santschi PH, **Xu, C.**, Ziervogel K, Kamalanathan M, Chin W-C, Burd AB, Wozniak A and Hatcher PG. 2021 Aggregation and Degradation of Dispersants and Oil by Microbial Exopolymers (ADDOMEx): Toward a Synthesis of Processes and Pathways of Marine Oil Snow Formation in Determining the Fate of Hydrocarbons. Front. Mar. Sci. 8:642160. doi: 10.3389/fmars.2021.642160
12. Lin, P., **Xu, C.**, Xing, W., Santschi, P.H. **2021**. Molecular-level characterization of diatom- and coccolithophore-associated organic biopolymers that strongly bind particle-reactive radionuclides (^{234}Th, ^{233}Pa, ^{210}Pb, ^{210}Po and ^{7}Be) in the ocean. Front. Mar. Sci., | https://doi.org/10.3389/fmars.2021.703503
13. Chen, C.-S., Shiu, R.-F., Hsieh, Y.-Y., **Xu, C.**, Vazquez, C.I., Cui, Y., Hsu, I.C., Quigg, A., Santschi, P.H., Chin, W.-C. **2021**. Stickiness of Extracellular Polymeric Substances on different surfaces via Magnetic Tweezers. STOTEN, https://doi.org/10.1016/j.scitotenv.2020.143766
14. Santschi, P.H., Chin, W.C., Quigg, A., Xu, C., Kamalanathan, M., Lin, P. **2021**. How does natural organic matter (NOM) affect micro- and nano-plastic pollution in the environment? - The biophysical mechanisms leading to the formation of 'Marine Plastic Snow'. Universal Journal of Engineering Mechanics 9 (2021), 32-42; *PaperSciences Research Publisher* (Journal of European Union Academy of Sciences, EUAS).

15. Sun, L.; **Xu, C.**; Lin, P.; Quigg, A.; Chin, W.-C.; Santschi, P. H., Photo-oxidation of proteins facilitates the preservation of high molecular weight dissolved organic nitrogen in the ocean. *Marine Chemistry* **2021,** *229*, 103907.

16. Lin, P.; **Xu, C.**; Sun, L. N.; Xing, W.; Santschi, P. H., Incorporation of Hydroxamate Siderophore and Associated Fe Into Marine Particles in Natural Seawater. Frontiers in Marine Science **2020**, 7 (964), November 12, 2020.

17. Bacosa, H. P.; Kamalanathan, M.; Cullen, J.; Shi, D. W.; **Xu, C.**; Schwehr, K. A.; Hala, D.; Wade, T. L.; Knap, A. H.; Santschi, P. H.; Quigg, A., Marine Snow Aggregates are Enriched in Polycyclic Aromatic Hydrocarbons (PAHs) in Oil Contaminated Waters: Insights from a Mesocosm Study. J Mar Sci Eng **2020**, 8, (10).

18. Genzer, J. L.; Kamalanathan, M.; Bretherton, L.; Hillhouse, J.; **Xu, C.**; Santschi, P. H.; Quigg, A., Diatom aggregation when exposed to crude oil and chemical dispersant: Potential impacts of ocean acidification. *Plos One* **2020,** *15*, (7).

19. Quigg, A., **Xu, C.**, Chin, W.-C., Kamalanathan, M., Sylvan, J.B., Finkel, Z.V., Irwin, A.J., Ziervogel, K., Wade, T.L., Knap, A.H., Hatcher, P.G., and Santschi, P.H. **2020**. Marine snow formation and fluxes after crude oil spills: Review of findings from the Deepwater Horizon oil spill study. *Proceedings of the International Oil Spill Conference*, May 2020. *Accepted.*

20. **Xu, C.**, Lin, P., Sun, L., Chen, H.-M., Xing, W., Kamalanathan, M., Hatcher, P.G., Conte, M.H., Quigg, A., and Santschi, P.H. (2020) Molecular nature of marine particulate organic iron-carrying moieties revealed by electrospray ionization Fourier-transform ion cyclotron resonance mass spectrometry (ESI-FTICRMS). Front. Earth Sci., doi: 10.3389/feart.2020.00266

21. Kamalanathan, M., Doyle, S.M., **Xu, C.**, Achberger, A.M., Wade, T.L., Schwehr, K., Santschi, P.H., Sylvan, J.B. and Quigg, A. (2020) Exoenzymes as a Signature of Microbial Response to Marine Environmental Conditions. mSystems 5, e00290-00220

22. Shiu, R.-F., Chiu, M.-H., Vazquez, C.I., Tsai, Y.-Y., Le, A., Kagiri, A., **Xu, C.**, Kamalanathan, M., Bacosa, H.P., Doyle, S.M., Sylvan, J.B., Santschi, P.H., Quigg, A. and Chin, W.-C. (2020) Protein to carbohydrate (P/C) ratio changes in microbial extracellular polymeric substances induced by oil and Corexit. Marine Chemistry 223, 103789

23. Santschi, P.H., **Xu, C.**, Schwehr, K.A., Lin, P., Sun, L., Chin, W.C., Kamalanathan, M., Bacosa, H.P., Quigg, A., 2020. Can the protein/carbohydrate (P/C) ratio of exopolymeric substances (EPS) be used as a proxy for their 'stickiness' and aggregation propensity? Marine Chemistry 218

24. Lin, P., **Xu, C.**, Xing, W., Sun, L., Schwehr, K.A., Quigg, A., Santschi, P.H., 2020. Partitioning of iron and plutonium to exopolymeric substances and intracellular biopolymers: A comparison study between the coccolithophore Emiliania huxleyi and the diatom Skeletonema costatum. Marine Chemistry 218, 103735

25. Li, D.E., **Xu, C.**, Yeager, C.M., Lin, P., Xing, W., Schwehr, K.A., Chen, N., Arthur, Z., Kaplan, D.I., Santschi, P.H., 2019. Molecular Interaction of Aqueous Iodine Species with Humic Acid Studied by I and C K-Edge X-ray Absorption Spectroscopy. Environmental Science & Technology 53, 12416-12424

26. Kaplan, D.I., Price, K., **Xu, C.**, Li, D., Lin, P., Xing, W., Nichols, R., Schwehr, K.A., Seaman, J.C., Ohnuki, T., Chen, N., Santschi P.H. 2019. Iodine Speciation in a Silver-Amended Cementitious System. Environment International, 126, 576–584.

27. **Xu, C.**; Lin, P.; Zhang, S.; Sun, L.; Xing, W.; Schwehr, K. A.; Chin, W.-C.; Wade, T. L.; Knap, A. H.; Hatcher, P. G.; Yard, A.; Jiang, C.; Quigg, A.; Santschi, P. H., The interplay of extracellular polymeric substances and oil/Corexit to affect the petroleum incorporation into sinking marine oil snow in four mesocosms. *Science of The Total Environment* **2019,** *693*, 133626

28. Li, D.; Kaplan, D. I.; Price, K. A.; Seaman, J. C.; Roberts, K.; **Xu, C.**; Lin, P.; Xing, W.; Schwehr, K.; Santschi, P. H., Iodine immobilization by silver-impregnated granular activated carbon in cementitious systems. *Journal of Environmental Radioactivity* **2019,** *208-209*, 106017.

29. Lin, P.; **Xu, C.**; Kaplan, D. I.; Chen, H. M.; Yeager, C. M.; Xing, W.; Sun, L. N.; Schwehr, K. A.; Yamazaki, H.; Saito-Kokubu, Y.; Hatcher, P. G.; Santschi, P. H., Nagasaki sediments reveal that long-term fate of plutonium is controlled by select organic matter moieties. *Science of the Total Environment* **2019,** *678*, 409-418.
30. Wozniak, A. S.; Prem, P. M.; Obeid, W.; Waggoner, D. C.; Quigg, A.; **Xu, C.**; Santschi, P. H.; Schwehr, K. A.; Hatcher, P. G., Rapid Degradation of Oil in Mesocosm Simulations of Marine Oil Snow Events. *Environ Sci Technol* **2019,** *53*, (7), 3441-3450.
31. Kaplan, D. I.; Price, K. A.; **Xu, C.**; Li, D.; Lin, P.; Xing, W.; Nichols, R.; Schwehr, K.; Seaman, J. C.; Ohnuki, T.; Chen, N.; Santschi, P. H., Iodine speciation in a silver-amended cementitious system. *Environment International* **2019,** *126*, 576-584.
32. Passow, U.; Sweet, J.; Francis, S.; **Xu, C.**; Dissanayake, A. L.; Lin, Y. Y.; Santschi, P. H.; Quigg, A., Incorporation of oil into diatom aggregates. *Marine Ecology Progress Series* **2019,** *612*, 65-86.
33. Chiu M.-H., Vazquez, C.I., Shiu, R.-F., Le, C., Sanchez, N.R., Kagiri, A., Garcia, C.A., Nguyen, C.H., Tsai, S.-M., Zhang, S., **Xu, C.**, Santschi, P.H., Quigg, A., Chin, W.-C. **2019**. Impact of Exposure of Crude Oil and Dispersant on Aggregation of Extracellular Polymeric Substances. Science of the Total Environment 657, 1535–1542.
34. Sun, L., Chin, W.-C., Chiu, M.-H., **Xu, C.**, Lin, P., Schwehr, K.A., Quigg, A., Santschi, P.H. **2019**. Sun.light induced aggregation of protein-containing dissolved organic matter in the ocean, Science of the Total Environment 654, 872–877.
35. Bretherton, L., Kamalanathan, M., Genzer, J., Hillhouse, J., Setta, S., Liang, Y., Brown, C., Bradet-Legris, M., **Xu, C.**, Sweet, J., Passow, U., Finkel, Z., Irwin, A., Santschi, P.H. Quigg, A. **2019**. Response of natural phytoplankton communities exposed to crude oil and chemical dispersants during a mesocosm experiment. Aquatic Toxicology 206, 43–53.
36. Lin, P., **Xu, C.**, Zhang, S., Fujitake, N., Kaplan, D.I., Yeager, C.M., Sugiyama, Y., Schwehr, K.A., Santschi, P.H. **2018.** Evidence for carboxyl-associated and nitrogen-containing organic compounds regulating the remobilization of plutonium in natural soils. Env. Sci. Technol., *51* (20), pp 11742–11751.
37. **Xu, C.**, Zhang, S., Beaver, M., Lin, P., Sun, L., Doyle, Sylvan, J.B., Wozniak, A., Schwehr, K.A., Lin, Y., Wade, T.L., Hatcher, P.G., Chin, W.-C., Chiu, M.-H., Quigg, A., Santschi, P.H. **2018b**. The role of microbially-mediated exopolymeric substances (EPS) in regulating Macondo oil transport in a mesocosm experiment. Marine Chemistry, 206, 52-61.
38. Schwehr, K. A., **Xu, C.**, Chiu, M.-H., Shang, S., Sun, L., Lin, P., Beaver, M., Jackson, C., Agueda, O., Chin, W.-C., Quigg, A., Santschi, P.H. **2018**. Protein: Polysaccharide ratio in exopolymeric substances controlling the surface tension of seawater in the presence or absence of surrogate Macondo oil with and without Corexit. Marine Chemistry, 206, 84-92.
39. **Xu, C.**, Zhang, S., Beaver, M., Lin, Y., Wade, T.L., Schwehr, K.A., Lin, P., Sun, L., Kopp, K., Chin, W.-C., Chiu, M.H., Hatcher, P.G., Knap, A.H., Quigg, A., Santschi, P.H. **2018a.** Decreased sedimentation efficiency of petro- and non-petro-carbon caused by a dispersant for Macondo surrogate oil in a mesocosm simulating a coastal microbial community. Marine Chemistry, 206, 34-43.
40. Sun, L., Chiu, M.-H., **Xu, C.**, Lin, P., Schwehr, K.A., Bacosa, H., Kamalanathan, M., Quigg, A., Chin, W.-C., Santschi, P.H. **2018**. The effects of sunlight on the composition of exopolymeric substances affecting the subsequent aggregation process during oil spill and corexit exposure. Marine Chemistry, 203, 49-54.
41. Kamalanathan, M., **Xu, C.**, Schwehr, K.A., Bretherton, L., Beaver, M., Doyle, S.M., Sweet, J., Genzer, J., Hillhouse, J., Sylvan, J.B., Santschi, P.H., Quigg, A**. 2018.** Extracellular enzyme activity profile in a

chemically enhanced water accommodated fraction of surrogate oil: towards understanding microbial activities after the Deepwater Horizon oil spill. Frontiers in Microbiology, section Aquatic Microbiology, doi: 10.3389/fmicb.2018.00798.

42. Kamalanathan, M., Schwehr, K.A., Bretherton, L.J., Genzer, J., Hillhouse, J., **Xu, C.**, Williams, A., Santschi, P.H., Quigg, A. **2018**. Diagnostic tool to ascertain marine aggregate's exposure to chemically enhanced water accommodated fraction of oil using Fourier Transform Infrared spectroscopy. Marine Pollution Bulletin, 130, 170–178.
43. Lin, P., **Xu, C.**, Xing, W., Sun, L., Kaplan, D.I., Fujitake, N., Yeager, C.M., Schwehr, K.A., Santschi, P.H. **2018.** Radionuclide uptake by colloidal and particulate humic acids obtained from 14 soils collected worldwide. Scientific Reports, 8 (1), 4795.
44. Grandbois, R., Yeager C.M., Tani, Y., **Xu, C.**, Zhang, S., Beaver, M., Schwehr, K.A., Kaplan, D.I., and Santschi, P.H., **2018.** Biogenic manganese oxides facilitate iodine oxidation at low pH. Geomicrobiology Journal, 35(3), 167–173.
45. Hatcher, P.G., Obeid, W., Wozniak, A.S., **Xu, C.**, Zhang, S., Santschi, P.H., Quigg, A. **2018.** Identifying oil/marine snow associations in mesocosm simulations of the Deep Water Horizon Oil Spill event using solid-state ^{13}C NMR spectroscopy. Marine Pollution Bulletin, 126, 159-165.
46. Lin, P., **Xu, C.**, Zhang, S., Sun, L., Schwehr, K.A., Bretherton, L., Quigg, A., Peter H. Santschi, P.H. **2017.** Partitioning of natural radionuclide analogues for particle cycling in the ocean (^{234}Th, ^{233}Pa, ^{210}Pb, ^{210}Po and ^{7}Be) with biopolymers associated with coccolithophores: a case study with *Emiliania huxleyi*. Journal of Geophysical Research: Biogeosciences, 122, 2033–2045.
47. Yeager, C.M., Amachi, S., Grandbois, R., Kaplan, D.I., **Xu, C.**, Schwehr, K.A., and Santschi, P.H. **2017.** Microbial transformation of iodine: From radioisotopes to iodine deficiency. Advances in Applied Microbiology, 101, 83-136.
48. Sun, L., **Xu, C.**, Chin, W.C., Schwehr, K.A., Zhang, S., Quigg, A., Santschi, P.H. 2017. Lightinduced aggregation of bacterial exopolymeric substances. Chemosphere, 181, 675-681, doi: 10.1016/j.chemosphere.2017.04.099.
49. Santschi, P. H.; **Xu, C.**; Zhang, S.; Schwehr, K. A.; Lin, P.; Yeager, C. M.; Kaplan, D. I., Recent advances in the detection of specific natural organic compounds as carriers for radionuclides in soil and water environments, with examples of radioiodine and plutonium. *Journal of Environmental Radioactivity* **2017,** *171*, 226-233.
50. DiDonato, N.; **Xu, C.**; Santschi, P. H.; Hatcher, P. G., Substructural Components of Organic Colloids from a Pu-Polluted Soil with Implications for Pu Mobilization. *Environmental Science & Technology* **2017,** *51* (9), pp 4803–4811.
51. Santschi, P.H., **Xu, C.**, Zhang, S., Schwehr, K.A., Grandbois, R., Kaplan, D., Yeager, C. 2016. Iodine and Plutonium Association with Natural Organic Matter: A Review of Recent Advances. Applied Geochemistry, doi: 10.1016/j.apgeochem.2016.11.009.
52. Quigg, A., Passow, U., Chin, W.-C., Bretherton, L., Kamalanathan, M., **Xu, C.**, Schwehr, K.A., Zhang, S., Sun, L., Wade, T.L., Finkel, Z.V., Doyle, S., Sylvan, J.B., Williams, A.K., Obeid, W., Hatcher, P.G., Knap, A.H., Santschi, P.H. 2016. Chemical and microbial Controls of Aggregation and Degradation of Oil and Dispersants by Microbial Exopolymers., L&O Letters, 1, 2016, 3–26
53. Hieke, A.-S.C., Brinkmeyer, R., Yeager, K.M., Schindler, K.J., Zhang, S., **Xu, C.**, Louchouarn, P., Santschi, P.H. 2016. Widespread distribution of Dehalococcoides spp. in the Houston Ship Channel and Galveston Bay, Texas, sediments and the potential for reductive dechlorinaton of PCDD/F in an estuarine environment. Marine Biotechnology, 18(6):630-644; doi:10.1007/s10126-016-9723-7.
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55. **Xu, C.**, Zhang, S., Sugiyama, Y., Nobuhito Ohte. N., Ho, Y.-F., Fujitake, N., Kaplan, D.I., Yeager, C.M., Kathleen Schwehr, K.A., Santschi, P.H. 2016. Factors controlling iodine and 239,240Pu concentrations and mobility in soils from the Northwestern Fukushima Prefecture, Japan. Journal of Environmental Radioactivity 153, 156-166.
56. **Xu, C.**, Zhang, S., Kaplan, D.I., Ho, Y.-F. , Schwehr, K.A., Roberts, K.A., Chen, H.M., Didonato, N., Athon, M., Hatcher, P.G., Santschi, P.H. 2015. Evidence for Hydroxamate Siderophores and Other N-Containing Organic Compounds Controlling 239,240Pu Immobilization and Remobilization in a Wetland Sediment. Environ. Sci. Technol., 49, 11458−11467
57. Chuang, C. Y.; Santschi, P. H.; **Xu, C.**; Jiang, Y. L.; Ho, Y. F.; Quigg, A.; Guo, L. D.; Hatcher, P. G.; Ayranov, M.; Schumann, D., Molecular level characterization of diatom-associated biopolymers that bind Th-234, Pa-233, Pb-210, and Be-7 in seawater: A case study with Phaeodactylum tricornutum. *J Geophys Res-Biogeo* **2015,** *120*, (9), 1858-1869.
58. Chuang, C.-Y., Santschi, P.H., Wen, L.S., **Xu, C.**, Zhang, S., Ho, Y.-F., Schwehr, K.A., Jiang, Y., Ho, Y.F., Schwehr, K.A., Quigg, A., Hung, C.-C., Guo, L.D.,, Ayranov, M., Schumann, D. 2015. Binding of Th, Pa, Pb, Po and Be radionuclides to marine colloidal macromolecular organic matter. Marine Chemistry, 173, 320–329.
59. **Xu, C.**, Zhang, S., Athon, M., Ho, Y.-F., Li, H.-P., Grandbois, R., Schwehr, K.A., Kaplan, D.I., Yeager, C.M., Wellman, D., Santschi, P.H. 2015. A Re-evaluation of Radioiodine Transformation and Migration in the subsurface of Hanford Site. J. Env. Radioactivity, 139, 43-55.
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61. Schwehr, K.A., Otosaka, S., Merchel, S., Kaplan, D.I., Zhang, S., **Xu, C.**, Li, H.- P., Ho, Y.-F., Yeager, C.M., Santschi, P.H., ASTER Team. 2014. Speciation of iodine isotopes inside and outside of a contaminant plume at the Savannah River Site. Science of the Total Environment, 497–498, 671–678.
62. Kaplan, D. I., M. E. Denham, S. Zhang, C. Yeager, **Xu, C.**, K. A. Schwehr, H. P. Li, Y. F. Ho, D. Wellman, and P. H. Santschi. 2014. Radioiodine Biogeochemistry and Prevalence in Groundwater. Critical Reviews of Environmental Science and Technology, 44(20), 2287-2335
63. Chang, H.-S., **Xu, C.**, Schwehr, K.A., Zhang, S., Kaplan, D.I., Seaman, J.C., Yeager, C., and Santschi, P.H. 2014. Model of Radioiodine Speciation and Partitioning in Organic-rich and Organic-poor Soils from the Savannah River Site. Journal of Environmental Chemical Engineering, 2, 1321-1330.
64. Emerson, H.P., **Xu, C.**, Ho, Y.-F., Zhang, S., Schwehr, K.A., Lilley, M., Kaplan, D.I., Santschi, P.H., and Powell, B.A. 2014. Geochemical controls of iodine transport in Savannah River Site subsurface environments. Applied Geochem., 45, 105–113.
65. **Xu, C.**, Athon, M., Ho, Y.-F., Chang, H.-S., Zhang, S., Kaplan, D.I., Schwehr, K.A., DiDonato, N., Hatcher, P.G., Santschi, P.H. 2014. Plutonium Immobilization and Re-mobilization by Soil Mineral and Organic Matter in the Far-field of the Savannah River Site, USA. ES&T, 48, 3186−3195.
66. Li, H.-P., Daniel, B., Creeley, D., Grandbois, R., Zhang, S., **Xu, C.**, Ho, Y.-F., Schwehr, K.A., Kaplan, D.I., Santschi, P.H., Hansel, C., Yeager, C.M. 2014. Superoxide production by a manganese-oxidizing bacterium facilitates iodide oxidation. Applied and Environmental Microbiology, 80(9), 2693-2699.
67. Kaplan, D.I., Zhang, S., Roberts, K.A., Schwehr, K.A., **Xu, C.**, Creeley, D., Ho, Y.-F., Li, H.-P., Yeager, C.M., and Peter H. Santschi, P.H. 2014. Radioiodine concentrated in a wetland. J. Environmental Radioactivity, 131, 57-61.
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92. Zhang, S. J.; **Xu, C.**; Santschi, P. H., Chemical composition and Th-234 (IV) binding of extracellular polymeric substances (EPS) produced by the marine diatom Amphora sp. *Marine Chemistry* **2008,** *112*, (1-2), 81-92.

NON-PEER- BUT EDITOR-REVIEWED OVERVIEW ARTICLES IN JOURNALS AND MAGAZINES (2)

1. Santschi, P.H., Chin, W.C., Quigg, A., **Xu, C.**, Kamalanathan, M., Lin, P. **2021**. How does natural organic matter (NOM) affect micro- and nano-plastic pollution in the environment? - The biophysical mechanisms leading to the formation of 'Marine Plastic Snow'. Universal Journal of Engineering Mechanics 9 (2021), 32-42; PaperSciences Research Publisher (Journal of European Union Academy of Sciences, EUAS).
2. Santschi, P.H., **Xu, C.**, Sun, L., Lin, P. **2022**. Photo - oxidation Facilitating the Preservation of High Molecular Weight Dissolved Organic Nitrogen in the Ocean, Universal Journal of Hydraulics 10 (2022), 16-27. PaperSciences Research Publisher (Journal of European Union Academy of Sciences, EUAS).

16. Santschi, P.H. 2023. Wondering about what it takes to make Earth a habitable Planet . Universal Journal of Engineering Mechanics 11 (2023), 28-36.

SELECTED RELEVANT CONFERENCE ABSTRACTS

Xu, C., Zhang, S., Beaver, M., Lin, Y., Lin, P., Sun, L., Schwehr, K.A., Wade, T.L., Kopp, K., Quigg, A., Passow, U., Chin, W.-C., Chiu, M.-H., Hatcher, P.G., Knap, A.H., Santschi, P.H. 2016. Microbially-mediated exopolymeric substances (EPS) production, composition and their role in regulating Macondo oil transport in a coastal phytoplankton-seeded mesocosm experiment. 72nd Annual Southwest Regional Meeting (SWRM), ACS Symposium on "Chemical and Biological Processes Regulating Transport of Pollutants in the Gulf of Mexico and Its Estuaries", Galveston, TX, November 10-13, 2016.

Xu, C., Zhang, S., Beaver, M., Lin, P., Sun, L., Schwehr, K.A., Quigg, A., Hatcher, P.G., Wozniak, A., Santschi, P.H. **2017.** Microbially-mediated exopolymeric substances production, composition and regulation of Macondo oil transport in two contrasting environments. Gulf of Mexico Oil Spill and Ecosystem Science Conference 2017, New Orleans, LA. February 6-9, 2017.

Xu, C., Lin, P., Sun, L., Schwehr, K.A., Xing, W., Yard, A., Wade, T.L., Knap, A.H., Quigg, A., Santschi, P.H. 2018. Effects of Water-Accommodated Fraction of Macondo Oil and Corexit on Oil Transport in Mesocosm Experiments. Gulf of Mexico Oil Spill and Ecosystem Science Conference, New Orleans, LA, February 5-8, 2018.

Xu, C., Lin, P., Sun, L., Schwehr, K., Xing, W., Hatcher, P.G., Chin, W.-C., Wade, T.L., Knap, A.H., Quigg, A., Santschi, P.H., 2019., How oil is transported via exopolymeric substances mediated marine snow formation in four mesocosms. Gulf of Mexico Oil Spill and Ecosystem Science Conference 2017, New Orleans, LA. February 4-7, 2019.

SYNERGISTIC ACTIVITIES

1. Invited reviewer for *Water (MDPI)*, *Aquatic Toxicology*, *Journal of Phycology*, *Environmental Pollution*, *Environmental Science Process & Impacts*, *Organic Geochemistry*, *Biogeosciences*, *Environmental Science and Technology*, *Analytical Chemistry, Geochimica et Cosmochimica Acta, Mar. Chem., Bioresource Technology*, *Jounral of Environmental Radioactivity, Chemosphere, Chemical Geology, Biodegradation* and *Journal of Proteomics & Bioinformatics, Journal of Hazardous Materials, Journal of Geochemical Exploration*, *Colloids and Surfaces: Biointerfaces, Science of the Total Environment*.

2. Recipient of 1) Erma Lee and Luke Mooney Graduate Student Excellence Research Award in 2008; 2) Welch Foundation Fellowship (Grant BD-0046; Spring, 2009); 3) Student Travel Fellowship recognized by Department of Energy-Subsurface Biogeochemical Research (DOE-SBR) program to attend the annual PI meeting in Washing DC (April 26-28, 2011); 4) Association of Former Students (AFS) Distinguished Graduate Student Award for Excellence in Research, Doctoral awarded by Texas A&M University, 2012.

3. Co-mentoring TEN undergraduate students: Andrew C. Reed from Gettysburg College，PA, (from May 26-July 31, 2009), Eric J. Miller, Matthew Athon, Camden J. Skinner, Isaac Johnson, Morgan Beaver, Alexandra Yard, Jamie, Christian Taylor, Nicole Patterson from Texas A&M University at Galveston TX. I have supervised three of them during the summer internship program at TAMUG sponsored by National Science Foundation (NSF) Research Experience for Undergraduates (REU) program, Texas A&M University at Galveston, and the Texas Institute for Oceanography.

FUNDING HISTORY

CO-Principal Investigators of the following projects:

BSEE, "Using Ecology-on-a-Chip (eChip) to examine degradation and microbial colonization of rising oil and dispersed oil droplets.", Sheng, J., Santschi, P.H., Xu, W., and Xu, C., co-PIs, 09/2022-02/2024, ($173,915)

DOE, Office of Science, SBR, "WATERSHED CONTROLS ON URANIUM CONCENTRATIONS TIED TO NATURAL ORGANIC MATTER AND IRON INTERACTIONS IN STREAMBEDS AND WETLANDS", Santschi, P.H., Kaplan, D.I., Yeager, C.M., **Xu, C.**, and Lin, P., co-PIs, Sept.,2020-Sept. 2023 ($310,000)

National Science Foundation – Chemical Oceanography, "Biopolymers produced by diatoms and coccolithophores as carriers for selected natural radionuclides (of Th, Pa, Pb, Po, Be) in the ocean", Peter H. Santschi, PI, Quigg, A., Schwehr, K.A., and **Xu, C.**, co-PIs, Feb. 1, 2014 – Jan. 31, 2018 ($506,849).

DOE, Office of Science, SBR, "Collaborative Research: Natural Organic Matter and Microbial Controls on Mobilization/Immobilization of I and Pu in soils in USA and Japan", Santschi, P.H. PI, **Xu, C.**, Schwehr, K.A., and Zhang, S., Kaplan, D.I., and Yeager, C.M., co-PIs, Aug. 1, 2015-July 31, 2018 ($600,000 total, $300,000 to TAMUG).

Also leading scientist for the following projects:

Gulf of Mexico Research Initiative (GoMRI), "Role of microbial exopolymers in aggregation and degradation of oil and dispersants", Santschi, P.H. (Deputy Director and PI), with Quigg, A. (Consortium Director), and Knapp, T., Wade, T.L., Chin, W.-C., Passow, U., Hatcher, P.G., Silvan, J., and Finkel, Z. (co-PIs), Jan. 1, 2015 – Dec. 31, 2017 ($7,245,432 total, $3,209,495 to TAMUG).

DOE, NEUP, Office of Nuclear Energy "Using Radioiodine Speciation to Address Environmental Remediation and Waste Stream Sequestration Problems at the Fukushima Daiichi Nuclear Power Plant and a DOE Site", Santschi, P.H., PI ($420,000 to TAMUG), Oct.1, 2016-Sept. 30, 2019.

DOE, subcontract from SRNS, "Radioiodine Speciation on G-SOW-A-01859 Waste Form Stabilization (SRNS RFP No.0000318991)", Santschi, P.H., PI, ($40,000 to TAMUG), 2017-2018 ($40,000 to TAMUG, subcontract from SRNL).

DOE, LDRD, "Silver-iodine Secondary Waste Stabilization: Multiscale Evaluation", Santschi, P.H., PI ($40,000 to TAMUG, subcontract from SRNL), January 1, 2018 - September 30, 2018.

Gulf of Mexico Research Initiative (GoMRI), "ADDOMEx 2: Towards a synthesis of processes and pathways of marine oil snow formation", Santschi, P.H. (Deputy Director and PI), with Quigg, A. (Consortium Director), and Knapp, T., Wade, T.L., Chin, W.-C., Passow, U., Hatcher, P.G., Silvan, J., and Finkel, Z. (co-PIs), Jan. 1, 2018 – Dec. 31, 2019 ($2.54 Million total).