

## CURRICULUM VITA

### Hussain A.N. Abdulla

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### EDUCATION:

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| Aug. 2009 | Ph.D. | Chemical Oceanography, Old Dominion University, Norfolk, Virginia-United State of America |
| Aug. 2005 | M.S.  | Oceanography, Old Dominion University, Norfolk, Virginia-United State of America          |
| Feb. 1998 | B.Sc. | Chemistry, University of Bahrain, Kingdom of Bahrain.                                     |

### PROFESSIONAL EXPERIENCE:

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| 2020- Now  | Associate Professor of Chemistry, Physical & Environmental Sciences Department, Texas A&M University Corpus Christi.   |
| 2014- 2020 | Assistant Professor of Chemistry, Physical & Environmental Sciences Department, Texas A&M University Corpus Christi.   |
| 2014- 2016 | Metabolomics Consultant, Jones Institute for Reproductive Medicine, Eastern Virginia Medical School.   |
| 2013- 2014 | Research Assistant Professor, Department of Ocean, Earth and Atmospheric Sciences, Old Dominion University.  |
| 2012- 2014 | Research Fellow, Jones Institute for Reproductive Medicine, Eastern Virginia Medical School.   |
| 2009- 2013 | Postdoctoral Research Associate, Department of Chemistry and Biochemistry, Old Dominion University.  |
| 2005- 2008 | Teaching Assistant, Department of Ocean, Earth and Atmospheric Sciences & Department of Chemistry and Biochemistry, Old Dominion University.   |
| 2005- 2009 | Research Assistant, Department of Chemistry and Biochemistry, Old Dominion University.   |
| 2001- 2003 | Marine Laboratory Observer (part time), Regal Organization of Marine Environment (ROPME) and International Atomic Environmental Agency (IAEA), Kuwait and Monaco. For monitoring petroleum hydrocarbons and trace metals analysis. |
| 1998- 2005 | Environmental Chemist, Environmental Affairs, Kingdom of Bahrain.  |

## TRAINING AND WORKSHOPS:

Attended the Introduction to Environmental 'Omics, University of Hawai'i at Manoa. Organized by NSF-EarthCube program. Hawai'i 25-26 July 2016.

Attended the 2<sup>nd</sup> Annual UAB-NIH Workshop on Metabolomics, University of Alabama at Birmingham, June 2 - 5, 2014.

Attended the US Arctic Implementation and Cruise Planning Meeting at National Science Foundation (NSF), Washington D.C. 13 - 15 June, 2012.

Attended the Training Course for the Analysis of Hydrocarbon in Marine Materials. Organized by the International Atomic Energy Agency, Marine Environment Laboratory (IAEA-MEL) and Regional Organization for the protection of the Marine Environment (ROPME). Manama, Kingdom of Bahrain, 16- 26 November 2002.

Attended the Training Course for the Analysis of Trace Metals in Marine Materials. Organized by the International Atomic Energy Agency, Marine Environment Laboratory (IAEA-MEL) and Regional Organization for the protection of the Marine Environment (ROPME). Manama, Kingdom of Bahrain, 2- 13 November 2002.

Attended the 2<sup>nd</sup> Workshop of Intercalibration Exercise on Trace Organic Analysis in Marine Environment. Organized by Regional Organization for the protection of the Marine Environment (ROPME), Kuwait Institute for Scientific Research (KISR) and International Atomic Energy Agency- Marine Environment Laboratory (IAEA-MEL), Kuwait, 15- 24 November 1999.

## AWARDS:

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| 2014       | NIH Travel Fellowship to attend the 2 <sup>nd</sup> Annual UAB Workshop on Metabolomics.   |
| 2011       | Carnegie Postdoctoral Fellowship, Geophysical Laboratory, Carnegie Institution of Washington. Washington D.C.                                |
| 2006-2007  | Dorothy Brown Smith Scholarship, Department of Ocean, Earth & Atmospheric Sciences, Old Dominion University.                                 |
| 2003- 2005 | Fulbright Student Scholarship, U.S. Department of State.   |
| 1996       | The Prize of His Highness Sheikh Hamad bin Isa Al Khalifa, King of Bahrain. Eminent students in students' activities, University of Bahrain. |
| 1992- 1998 | Ministry of Education Scholarship to study B.Sc. in Chemistry, University of Bahrain.  |

## PUBLICATIONS:

### ✓ *Peer Reviewed Publications*

1. Steen, A.D., Kusch, S., **Abdulla, H. A.**, Cacic, N., Coffinet, S., Dittmar, T., Fulton, J.M., Galy, V., Hinrichs, K-U, Ingalls, A.E., Koch, B.P., Kujawinski, E., Liu, Z., Osterholz, H., Rush, D., Seidel, M., Sepúlveda, J. and Wakeham, S.G. (2020). Analytical and computational advances, opportunities, and challenges in marine organic biogeochemistry in an era of "omics". *Front. Mar. Sci.* 7:718.

2. Cabello-Pinedo, S., **Abdulla, H.A.**, Seth-Smith, M.L., Escriba, M., Crespo, J., Munne, S. and Horcajadas, J.A., 2020. A novel non-invasive metabolomics approach to screen embryos for aneuploidy. *Fertility and Sterility*, 114(3), pp.e5-e6.
3. Cabello, S., **Abdulla, H.**, Seth-Smith, M.L., Escriba, M., Crespo, J., Munne, S. and Horcajadas, J.A., 2020. Non-invasive metabolomics analysis of spent culture media predicts embryo viability. *Human Reproduction*, 35, pp. I231-I232.
4. Cabello-Pinedo, S., **Abdulla, H.**, Seth-Smith, M.L., Escriba, M., Crespo, J., Munne, S. and Horcajadas Almansa, J.A., 2020. A metabolomics approach to identify aneuploid embryos to increase the effectiveness of ART cycles. *Human Reproduction*, 35, pp. I205-I205.
5. Cabello-Pinedo, S., **Abdulla, H.**, Seth-Smith, M.L., Escriba, M., Crespo, J., Horcajadas, J.A. and Munne, S., 2020, July. Non-invasive detection of metabolically impaired euploid blastocysts with low implantation potential. *Human Reproduction*, 35, pp. I217-I217.
6. Akam, S.A., Coffin, R.B., **Abdulla, H.A.** and Lyons, T.W. (2020). Dissolved inorganic carbon pump in methane-charged shallow marine sediments: State of the art and new model perspectives. *Front. Mar. Sci.* 7:206.
7. Berthold, D.E., Lefler, F.W., Huang, I.S., **Abdulla, H.**, Zimba, P.V. and Laughinghouse IV, H.D., *Iningainema tapete* sp. nov.(Scytonemataceae, Cyanobacteria) from greenhouses in central Florida (USA) produces two types of nodularin with biosynthetic potential for microcystin-LR and anabaenopeptin production. *Harmful Algae*, 101, p.101969.
8. Zimba, P. V. , Shalygin, S., Huang, I. , Momčilović, M. and **Abdulla, H.** (2020). A new boring toxin producer – *Perforafilum tunnelli* gen. & sp.nov.(Oscillatoriales, Cyanobacteria) isolated from Laguna Madre, Texas, USA, *Phycologia*, DOI:10.1080/00318884.2020.1808389.
9. Huang, I., Pinnell, L.J., Turner, J.W., **Abdulla, H.**, Boyd, L., Linton, E.W. and Zimba, P.V. (2020). Preliminary assessment of microbial community structure of wind-tidal flats in the Laguna Madre, Texas, USA. *Biology*, 9(8), p.183.
10. Spalt, N., Murgulet, D. and **Abdulla, H.** (2020). Spatial variation and availability of nutrients at an oyster reef in relation to submarine groundwater discharge. *Science of The Total Environment*, 710, p.136283.
11. **Abdulla, H.A.**, Burdige, D.J. and Komada, T. (2020). Abiotic formation of dissolved organic sulfur in anoxic sediments of Santa Barbara Basin. *Organic Geochemistry*, 139, p.103879.
12. Fox, C.A., **Abdulla, H.A.**, Burdige, D.J., Lewicki, J.P. and Komada, T. (2018). Composition of dissolved organic matter in pore waters of anoxic marine sediments analyzed by 1H nuclear magnetic resonance spectroscopy. *Frontiers in Marine Science*, 5, p.172.
13. Jennings, M., **Abdulla, H.**, Stubbins, A., Sun, L., Wang, R. and Mopper, K. (2018). A dissolved organic carbon analyzer capable of detecting low nM differences in natural fresh waters: A proof of concept study. *Limnology and Oceanography: Methods*, 16(5), 309-321.

14. **Abdulla, H.A.**, Burdige, D.J. and Komada, T. (2018). Accumulation of deaminated peptides in anoxic sediments of Santa Barbara Basin. *Geochimica et Cosmochimica Acta*, 223, 245-258.
15. Bundy, R.M., **Abdulla, H.A.**, Hatcher, P.G., Biller, D.V., Buck, K.N. and Barbeau, K.A. (2015). Iron-binding ligands and humic substances in the San Francisco Bay estuary and estuarine-influenced shelf regions of coastal California. *Marine Chemistry*, 173, 183-194.
16. Mesfioui, R., **Abdulla, H.A.** and Hatcher, P.G. (2014). Photochemical alterations of natural and anthropogenic dissolved organic nitrogen in the York River. *Environmental Science & Technology*, 49(1), 159-167.
17. Chen, H., **Abdulla, H. A.**, Sanders, R., Myneni, S., Mopper, K., & Hatcher, P. G. (2014). Production of black carbon-like and aliphatic molecules from terrestrial dissolved organic matter in the presence of sunlight and iron. *Environmental Science & Technology Letters*. 1(10), 399–404.
18. Sleighter, R. L., Cory, R. M., Kaplan, L., **Abdulla, H. A.** and Hatcher, P. G. (2014). A coupled geochemical and biogeochemical approach to characterize the bioreactivity of dissolved organic matter from a headwater stream. *Journal of Geophysical Research: Biogeosciences* 119, 1520-1537.
19. **Abdulla, H. A.**, and Hatcher, P. G. (2014). Dynamics of dissolved organic matter: A view from two dimensional correlation spectroscopy techniques. *Journal of Molecular Structure* 1069, 313-317.
20. Zigah, P. K., Minor, E. C., **Abdulla, H. A.**, Werne, J. P., and Hatcher, P. G. (2014). An investigation of size-fractionated organic matter from Lake Superior and a tributary stream using radiocarbon, stable isotopes and NMR. *Geochimica et Cosmochimica Acta* 127, 264-284.
21. Sun, L., Chen, H., **Abdulla, H. A.**, and Mopper, K. (2014). Estimating hydroxyl radical photochemical formation rates in natural waters during long-term laboratory irradiation experiments. *Environmental Science: Processes & Impacts* 16(4), 757-763.
22. Helms, J. R., Mao, J., Schmidt-Rohr, K., **Abdulla, H. A.** and Mopper, K. (2013). Photochemical flocculation of terrestrial dissolved organic matter and iron. *Geochimica et Cosmochimica Acta* 121, 398-413.
23. **Abdulla, H. A.N.**, Minor, E. C., Dias, R. F. and Hatcher, P.G. (2013). Transformations of the chemical compositions of high molecular weight DOM along a salinity transect: using two dimensional correlation spectroscopy and principal component analysis approaches. *Geochimica et Cosmochimica Acta*, 113, 231-246.
24. **Abdulla, H. A.N.**, Sleighter, R.L. and Hatcher, P.G. (2013). Two dimensional correlation analysis of Fourier transform ion cyclotron resonance mass spectra of dissolved organic matter: A new graphical analysis of trends. *Analytical Chemistry* 85(8), 3895-3902.
25. Wozniak, A. S., Shelley, R. U., Sleighter, R. L., **Abdulla, H. A.N.**, Morton, P. L., Landing, W. M. and Hatcher, P. G. (2013). Relationships among aerosol water soluble organic matter, iron and aluminum in European, north African, and marine air masses from the 2010 US GEOTRACES cruise. *Marine Chemistry* 154, 24-33.

26. Stubbins, A., Hood, E., Raymond, P. A., Aiken, G. R., Sleighter, R. L., Hernes, P. J., Butman, D., Hatcher, P. G., Striegl, R. G., Schuster, P., **Abdulla, H. A.N.**, Vermilyea, A. W., Scott, D. T., and Spencer, R. G. M. (2012). Anthropogenic aerosols as a source of ancient dissolved organic matter in glaciers. *Nature Geoscience* 5, 198-201.
27. **Abdulla, H. A.N.**, Minor, E. C. and Hatcher, P. G. (2010). Using two-dimensional correlations of  $^{13}\text{C}$  nmr and ftir to investigate changes in the chemical composition of dissolved organic matter along an estuarine transect. *Environmental Science & Technology* 44(21), 8044-8049.
28. **Abdulla, H. A.N.**, Minor, E. C., Dias, R. F. and Hatcher, P. G. (2010). Changes in the compound classes of dissolved organic matter along an estuarine transect: A study using FTIR and  $^{13}\text{C}$ -NMR. *Geochimica et Cosmochimica Acta* 74(13), 3815-3838.
29. **Abdulla, H. A.N.**, Dias, R. F. and Minor, E. C. (2009). Understanding the enhanced aqueous solubility of styrene by terrestrial dissolved organic matter using stable isotope mass balance and FTIR. *Organic Geochemistry* 40 (5), 547-552.
30. Minor, E. C., Pothen, J., Dalzell, B., **Abdulla, H.**, and Mopper, K. (2006). Effects of salinity changes on the photodegradation and uv-visible absorbance of terrestrial dissolved organic matter. *Limnology & Oceanography* 51(5), 2181-2186.
31. Hassan, A. M., Mandeel, Q. A., and **A.Nabi, H.** (2003). Evaluation of some metals in commonly consumed spices in Bahrain Arabian Gulf. *Journal of Scientific Research* 21(2), 79-85.
32. Ali-Mohamed, A.Y. and **Ali, H. A.N.** (2000). Estimation of atmospheric inorganic water-soluble particulate matter in Muharraq Island, Bahrain, (Arabian Gulf), by ion chromatography. *Atmospheric Environment* 35, 761-768.

✓ **Non-Peer Reviewed Article:**

**Abdulla, H.** and Murgulet, D. (2017) Mass Spec Reveal Decades-old Hidden Pollutants. *Laboratory Equipment*. <https://www.laboratoryequipment.com/article/2017/11/mass-spec-reveals-decades-old-hidden-pollutants>

Chosen as one of the best talk at the 11th International Symposium on Recent Advances in POPs and Emerging Contaminant Analysis, May 18-19th, 2017, Boston, MA.

**PRESENTATIONS and ABSTRACTS:**

1. Cabello-Pinedo, S., **Abdulla, H.**, Seth-Smith, M.L, Escriba, M. , Crespo J., Munné, S., Horcajadas, J.A.(2020). A Novel Non-Invasive Metabolomics Approach to Screen Embryos for Aneuploidy. In American Society for Reproductive Medicine Scientific Congress & Expo, October 2020 (*recipient of the SRBT Clinical Science Award*).
2. Murgulet, I\*, Douglas, A.R., Wolfe, W. and **Abdulla, H. A.** (2020). Nutrient and DOM distribution and transformation along a river course from headwaters to discharge: Inorganic and organic nutrients. In 2020 AGU Fall Virtual Meeting. December 2020. (\* *High School Student*).

3. Burdige D.J, Komada T, and **Abdulla H.A.** (2020). Linking dissolved organic matter composition data to reaction-transport models of sediment diagenesis (invited keynote talk). Oral Presentation (virtual). In 2020 Goldschmidt Conference in Honolulu, HI.
4. **Abdulla H.A.**, Komada, T. and Burdige, D.J. (2020). A tale of two basins: The role of peptide deamination in the accumulation of pore water dissolved organic matter in marine sediments. Oral Presentation (virtual). In 2020 Goldschmidt Conference in Honolulu, HI.
5. Komada T., Burdige D.J. and **Abdulla H.A.** (2020). Testing peptide deamination as a pathway for refractory DOM production in sediments: Incubation experiment results. Oral Presentation (virtual). In 2020 Goldschmidt Conference in Honolulu, HI.
6. **Abdulla, H.A.**, Burdige, D. and Komada, T. (2020). Structural elucidation of deaminated peptides in anoxic sediments. In 2020 Ocean Sciences Meeting. February 2020, San Diego, CA.
7. Shrestha, S. and **Abdulla, H.A.** (2019). Photo-transformation of dissolved organic nitrogen in coastal regions. Poster Presentation. In 2019 AGU Fall Meeting. December 2019, San Francisco, CA.
8. Fraire, A., Felix, J.D. and **Abdulla, H.A.** (2019). Chemical characterization of dissolved organic matter in sequential Hurricane Harvey wet deposition samples. Poster Presentation. In 2019 AGU Fall Meeting. December 2019, San Francisco, CA.
9. Greige, M., Murgulet, D., Douglas, A.R. and **Abdulla, H.A.** (2019). Hurricane Harvey's impact on the DOM composition on the south shore of Corpus Christi Bay, Texas. Oral Presentation. In 2019 AGU Fall Meeting. December 2019, San Francisco, CA.
10. Douglas, A.R., Murgulet, D. and **Abdulla, H.A.** (2019). Seasonal trends and relationships between surface and porewater dissolved organic matter in a disturbed semi-arid estuary. Poster Presentation. In 2019 AGU Fall Meeting. December 2019, San Francisco, CA.
11. Kaiser, K.; **Abdulla, H.** and Walker, B. (2019). Dynamic cycling of dissolved organic matter in oxygen minimum zones revealed by spectroscopic and molecular-level analyses. Oral Presentation. In 2019 Aquatic Science Meeting, Feb. 23<sup>rd</sup> -March 2<sup>nd</sup>, 2019. San Juan, Puerto Rico.
12. Walker, B. D., Dennison, P. R. **Abdulla, H.**, Druffel, E. (2018). <sup>1</sup>H-NMR molecular-level composition of total dissolved organic matter in the northern Gulf of Mexico. Oral Presentation. In 2018 Ocean Science Meeting, Feb. 11-16, 2018. Portland, Oregon.
13. **Abdulla, H.**, Komada, T. and Burdige, D. (2017). Accumulation of refractory deaminated peptides in anoxic sediments of Santa Barbara Basin. University of Minnesota-Duluth, Nov. 17<sup>th</sup> 2017 (*Invited talk*).
14. **Abdulla, H.**, Maupins, M., Douglas, A. and Murgulet, D. (2017). Assessment of organophosphorus pollutants in Nueces Bay's petroleum brine impacted sediments. In 11<sup>th</sup> International Symposium on Recent Advances in POPs and Emerging Contaminant Analysis, May 18-19<sup>th</sup>, 2017, Boston, MA (*Invited talk*).
15. Douglas, A. , **Abdulla, H.**, Maupins, M., Jemison, C. and Murgulet, D. (2017). Molecular characterization of dissolved organic matter in surface and groundwater in a highly disturbed semi-arid secondary bay. Oral Presentation, In 2017 ASLO Aquatic Sciences Meeting, Feb 26<sup>th</sup> -Mar 3<sup>rd</sup> , 2017. Honolulu, Hawai'i.
16. Maupins, M. and **Abdulla, H.** (2016). Identifying refractory deaminated peptides in aquatic environment. Oral Presentation. In Gulf Coast Undergraduate Research Symposium, October 22<sup>nd</sup>, 2016. Rice University, TX.

17. Maupins, M. and **Abdulla, H.** (2016). Identifying refractory deaminated peptides in aquatic environment. Oral Presentation. In 13<sup>th</sup> Annual Pathways Annual Symposium, November 3-4, 2016. Prairie View A&M University, TX. (*Best Environmental Science oral presentation*).
18. **Abdulla, H.**, Komada, T. and Burdige, D. (2016). Accumulation of refractory deaminated peptides in anoxic sediments of Santa Barbara Basin. Texas A&M University- Galveston. October 13<sup>th</sup> 2016 (*Invited talk*).
19. Komada, T., Fox, C., Li, H., Burdige, D., **Abdulla, H.** and Lewicki, J. (2016). What constitutes the refractory component of pore-water dissolved organic matter? Poster presentation. In 2013 ASLO Aquatic Sciences Meeting. February 21-26, 2013. New Orleans, Louisiana.
20. Jennings, M., Mopper, K., **Abdulla, H.**, Sun, L., Wang, R., Stubbins, A. and Hansell, D. (2016). Optimization of a TOC/DOC analyzer with nM precision. Poster presentation. In 2013 ASLO Aquatic Sciences Meeting. February 21-26, 2013. New Orleans, Louisiana.
21. **Abdulla, H.**, Komada, T. and Burdige, D. (2015). Transformations and alterations of porewater dissolved organic matter in an anoxic sediment. Marine Science Institute, University of Texas at Austin, October 2<sup>nd</sup> 2015. Port Aransas, TX. (*Invited talk*).
22. **Abdulla, H.** and Mopper, K. (2015). The Removal of terrestrial dissolved organic matter in coastal regions by photo-flocculation process. Poster presentation. In 2015 AGU meeting, December 14-18, 2015. San Francisco, CA.
23. Fox, C., Lewicki, J., **Abdulla, H.**, Burdige, D., Magen, C., Chanton, J. and Komada, T. (2015). Characterization of whole porewater dissolved organic matter by <sup>1</sup>H NMR. Oral Presentation. In 2015 ASLO Aquatic Sciences Meeting. February 22-27, 2015. Granada, Spain.
24. Fox, C., Lewicki, J.P., **Abdulla, H.A.**, Burdige, D., Magen, C., Chanton, J. and Komada, T. (2014). Characterization of whole porewater dissolved organic matter by <sup>1</sup>H NMR. Poster presentation. In 2014 AGU meeting, December 15-19, 2014. San Francisco, CA.
25. **Abdulla, H.**, Komada, T., Hatcher, P. and Burdige, D. (2014). Changes in the chemical compositions of porewater dissolved organic matter across the sulfate methane transition region. Poster presentation. In 2014 Goldschmidt Conference. June 8-13, 2014. Sacramento, CA.
26. Fox, C., Lewicki, J., **Abdulla, H. A.**, Harley, S., Burdige, D., Magen, C., Chanton, J. and Komada, T. (2014). Characterization of whole porewater dissolved organic matter by <sup>1</sup>H NMR. Poster presentation. In 2014 Goldschmidt Conference. June 8-13, 2014. Sacramento, CA.
27. **Abdulla, H. A.**, Chen, H., Sun, L., Helms, J., Mopper, K. and Hatcher, P. G. (2013). Photochemically induced iron and organic matter flocculation. Oral presentation. In 2013 ASLO Aquatic Sciences Meeting. February 17-22, 2013. New Orleans, Louisiana.
28. Hatcher, P. G., **Abdulla, H. A.** and Sleighter, R. L. (2013). Two dimensional correlations analysis of Fourier transform ion cyclotron resonance mass spectra of dissolved organic matter. Oral presentation. In 2013 ASLO Aquatic Sciences Meeting. February 17-22, 2013. New Orleans, Louisiana.
29. Mopper, K., **Abdulla, H.**, Sun, L. and Stubbins, A. (2013). Development of high-precision toc/doc analyser with a low nano-molar (10<sup>-9</sup> M) detection limit. Oral presentation. In 2013 ASLO Aquatic Sciences Meeting. February 17-22, 2013. New Orleans, Louisiana.
30. Chen, H., **Abdulla, H. A.**, Sun, L., Mopper, K. and Hatcher, P. (2013). Photochemical flocculation of organic matter in iron rich waters studied by ESI-FTICR mass spectrometry.

- Oral presentation. In 2013 ASLO Aquatic Sciences Meeting. February 17-22, 2013. New Orleans, Louisiana.
31. Walker, B. D., **Abdulla, H. A.**, Hatcher, P. G., McCarthy, M. D. and Druffel, E. (2013). Molecular and isotopic variability of dissolved organic matter within a unique costal upwelling system: A combined  $^{14}\text{C}$  and  $^1\text{H}$ -NMR approaches. Oral presentation. In 2013 ASLO Aquatic Sciences Meeting. February 17-22, 2013. New Orleans, Louisiana.
  32. Sleighter, R. L., **Abdulla, H. A.**, Stubbins, A., Spencer, R. G., Holmes, R. M., McClelland, J. M. and Hatcher, P. G. (2013). Multivariate statistics assist in the characterization of dissolved organic matter in arctic rivers analyzed by advanced analytical techniques. Oral presentation. In 2013 ASLO Aquatic Sciences Meeting. February 17-22, 2013. New Orleans, Louisiana.
  33. Willoughby, A. S., Wozniak, A. S., **Abdulla, H. A.** and Hatcher, P. G. (2013). Chemical characterization of chromophoric organic matter in ambient aerosols using UV-Vis, NMR and ESI-FTICR-MS. Oral presentation. In 2013 ASLO Aquatic Sciences Meeting. February 17-22, 2013. New Orleans, Louisiana.
  34. Gurganus, S. C., Wozniak, A. S., Shelley, R. U., Willoughby, A. S., Sleighter, R. L., **Abdulla, H. A.**, Landing, W. M. and Hatcher, P. G. (2013). Trace metal and organic matter characteristics of aerosols from marine air masses. Oral presentation. In 2013 ASLO Aquatic Sciences Meeting. February 17-22, 2013. New Orleans, Louisiana.
  35. **Abdulla, H. A.**; Mopper, K. and Hatcher, P. G. (2012). Transformation of terrestrial polycarboxyl compounds: The forgotten component. Poster Presentation. In 2012 Ocean Science Meeting. February 20-24, 2012. Salt Lake City, Utah.
  36. **Abdulla, H. A.**, Caricasole, P., Chen, H., Kamga, A. W., McKee, G. A., Mesfioui, R., Salmon, E., Sleighter, R. L. and Hatcher, P. G. (2011). Application of advanced nuclear magnetic resonance (NMR) spectroscopy and ultrahigh resolution mass spectrometry (MS) to studies of organic matter transformations. Oral presentation. In 2011 Goldschmidt Conference. August 14-19, 2011. Prague, Czech Republic.
  37. **Abdulla, H. A.**, Minor, E. C., Dias, R. F. and Hatcher, P. G. (2010). Seasonal and spatial changes in the chemical compositions of dissolved organic matter along an estuarine transect: a study using two dimensional correlations of  $^{13}\text{C}$ -NMR and FTIR. Poster Presentation. In 2010 Ocean Science Meeting. February 22-26, 2010. Portland, Oregon.
  38. **Abdulla, H. A.**, Minor, E. C., Dias, R. F. and Hatcher, P. G. (2009). Changes in the compound classes of dissolved organic matter along an estuarine transect: A study using FTIR and  $^{13}\text{C}$ -NMR. Poster presentation. In Symposium on the future of chemical oceanography "Unknown Known and Known Unknown: Chemical Oceanography in Changing World". February 22-24, 2009. Savannah, GA.
  39. **Abdulla, H. A.**, Minor, E. C., Dias, R. F. and Hatcher, P. G. (2009). Seasonal and spatial changes in the chemical compositions of dissolved organic matter along an estuarine transect: A study using isotope ratio mass spectrometry, FTIR and  $^{13}\text{C}$ -NMR. Poster presentation. In 2009 Gordon Research Conference - Chemical Oceanography. August 2-7, 2009. Tilton, NH.
  40. **Abdulla, H.A.**, Minor, E. C. and Dias, R. F. (2008). Stable isotopic and FTIR investigations into the interaction between organic model compounds and dom in a sub-estuary. Poster Presentation. In 2008 Ocean Science Meeting, March 2-7, 2008. Orlando, FL.
  41. Sleighter, R. L.; Li, Z.; **Abdulla, H. A.**, Dias, R. F. and Hatcher, P. G. (2008). Evidence of a lignin source for previously uncharacterized components of dissolved organic matter (DOM) in marine waters. Oral presentation. In 2008 Ocean Science Meeting, March 2-7, 2008. Orlando, FL.



42. **Abdulla, H. A.**, Minor, E. C. and Dias, R. F. (2008). Compound classes characterization of total dissolved organic matter from saltwater systems using FTIR. Oral presentation. In 2008 Ocean Science Meeting, March 2-7, 2008. Orlando, FL.
43. **Abdulla, H. A.**, and Dias, R. F. (2007). Probing the reactivity of DOM: Determining the enhanced aqueous solubility of organic compounds by dissolved organic matter in natural waters using stable isotope mass balance. Poster presentation. In 234<sup>th</sup> ACS National Meeting, August 19-23, 2007. Boston, MA.
44. **Abdulla, H. A.**, Dias, R. F.; Brown, T. and Minor, E. C. (2007). Compound classes characterization of bulk marine/estuarine DOM using FTIR. Oral presentation. In 234<sup>th</sup> ACS National Meeting, August 19-23, 2007. Boston, MA.
45. **Abdulla, H. A.** and Dias, R. F. (2007). Probing the Reactivity of DOM: Determining the enhanced aqueous solubility of organic compounds by dissolved organic matter in natural waters using stable isotope mass balance. Poster presentation. In 2007 Gordon Research Conference - Chemical Oceanography, August 5-10, 2007. Tilton, NH.
46. **Abdulla, H. A.** and Dias, R. F. (2006). Probing the Reactivity of DOM: Determining the enhanced aqueous solubility of organic compounds by dissolved organic matter in natural waters using stable isotope mass balance. Poster presentation. In 2006 AGU National Meeting, December 11-15, 2006. San Francisco, CA.

## GRANTS:

### Grant Awarded (Total \$3,572,632 ; Abdulla's share \$1,846,003)

Texas General Land Office: "*An integrated assessment of nutrient loadings to Baffin Bay, Texas*". (\$1,189,414 Total, \$271,435 Abdulla Share; 09/01/2020- 08/31/2022). Mike Wetz (Lead PI), Dorina Murgulet (Co-PI), **Hussain Abdulla (Co-PI)**, Mohamed Ahmed (Co-PI) and Joseph Felix (Co-PI).

NSF-Chemical Oceanography: "*Peptide deamination as a source of refractory dissolved organic in marine sediments*". (\$1,176,535-Total, \$367,885- TAMUCC Share; 03/01/2018- 02/28/2021). **Hussain Abdulla (Lead PI)**. David Burdige (Old Dominion University, Co-PI) and Tomoko Komada (San Francisco State University, Co-PI).

NSF-RAPID "*Collaborative Research: Mobilization and transport of contaminants to groundwater in flood-impacted unconnected*". (\$34,836 TAMUCC Share, 10/01/2020-09/30/2021). Dorina Murgulet (Lead PI), **Hussain Abdulla (Co-PI)**.

NSF-MRI "*MRI: Acquisition of a GC triple quadrupole mass spectrometer for environmental and biogeochemical research*" (\$222,141, 10/1/2018-09/30/2019). Jeremy Conkle (PI), **Hussain Abdulla(Co-PI)**, Lin Zhang (Co-PI) and Brandi Reese (Co-PI).

Coastal Bend Bays & Estuaries Program "*Assessment of organic pollutants in Nueces Bay's petroleum brine impacted sediments*" (\$48,290; September 1, 2018 - August 31,2019). **Hussain Abdulla (PI)** and Dorina Murgulet (Co-PI).

MRI-NSF (OCE-1626494) award: "*Acquisition of hybrid mass spectrometer for geochemistry and environmental studies*" (\$681,416; 9/1/16-8/31/17). **Hussain Abdulla (PI)**, Paul Zimba (Co-PI), Jeremy Conkle (Co-PI).

Hussain Abdulla, Ph.D.

TCRF- Program Development TAMUCC award: “*The Removal of terrestrial dissolved organic matter in coastal regions by photo-flocculation process*” (\$20,000, 9/1/16-8/31/17). **Hussain Abdulla (PI)**.

Howard and Georgeanna Jones Foundation for Reproductive Medicine award: “*Identification of biomarkers of human embryo developmental potential in IVF: A novel non-invasive metabolomics approach*” (\$200,000, 7/1/2013- 6/30/2015). Sergio Oehninger (PI, EVMS), **Hussain Abdulla (Co-PI)**.

## **TEACHING EXPERIENCES:**

Advanced Instrumental Analysis (CHEM 5317), Department of Physical and Environmental Sciences, Texas A&M University-Corpus Christi, Texas.

Advanced Mass Spectrometer Techniques (CHEM 5490), Department of Physical and Environmental Sciences, Texas A&M University-Corpus Christi, Texas.

General Chemistry (CHEM 1411), Department of Physical and Environmental Sciences, Texas A&M University-Corpus Christi, Texas.

Oceanography (ESCI 3350), Department of Physical and Environmental Sciences, Texas A&M University-Corpus Christi, Texas.

Directed Independent Study (CHEM 4696), Department of Physical and Environmental Sciences, Texas A&M University-Corpus Christi, Texas.

Organic and Stable Isotope Geochemistry (CMSS 6361), Department of Physical and Environmental Sciences, Texas A&M University-Corpus Christi, Texas.

Senior Chemistry Seminar (CHEM 4292), Department of Physical and Environmental Sciences, Texas A&M University-Corpus Christi, Texas.

Introduction to Oceanography Laboratory (OEAS 107N), Department of Ocean, Earth and Atmospheric Sciences, Old Dominion University, Virginia, USA.

Organic Chemistry Laboratory (CHEM 212), Department of Chemistry and Biochemistry, Old Dominion University, Virginia, USA.

## **SERVICES:**

### **Outreach**

**Organize an interactive seminar** on “*Gas Chromatography Solutions for Refinery Gas Analysis*” In collaboration with Thermofisher for local gas refineries and contract laboratories in the region, November 3<sup>rd</sup> 2016, TAMUCC.

Reviewed the type of analyses and laboratory results of the air and water quality that conducted after Arkema accident during Hurricane Harvey.

<https://www.houstonchronicle.com/news/houston-texas/houston/article/For-Crosby-residents-a-bitter-taste-about-12771298.php>

Hussain Abdulla, Ph.D.

### **Professional Services:**

- Chairman of the College of Science Society, University of Bahrain (1996-1997).
- Member of American Chemical Society, ACS (1997- now).
- Member of American Society of Limnology & Oceanography, ASLO (2005- now).
- Member of American Geophysical Union, AGU (2005- now).
- Member of Metabolomics Society (2014- now).
- Member of American Society for Mass Spectrometry, ASMS (2017-now).
- Session co-chair, American Geophysical Union meeting in San Francisco, CA (2015).
- Session co-chair, Aquatic Science meeting in San Juan, Puerto Rico (2019).
- Chief Scientist, R/V Oceanus, June 20<sup>th</sup> 2019- July 4<sup>th</sup> 2019.
- Chief Scientist, R/V Sikuliaq, Nov. 29<sup>th</sup> 2020- Dec. 13<sup>th</sup> 2020.

### ✓ **Peer Reviewer for the following Journals**

*Nature.*

*Organic Geochemistry.*

*Limnology & Oceanography: Methods.*

*Limnology & Oceanography*

*Marine Chemistry.*

*Water Research.*

*Geochimica et Cosmochimica Acta.*

*Estuarine, Coastal and Shelf Science.*

*Environmental Toxicology and Chemistry.*

*Environmental Science and Pollution Research.*

*Biogeochemistry of Marine Dissolved Organic Matter (2<sup>nd</sup> edition Book).*

### **Ph.D. Advisors**

David Burdige (Old Dominion University), Robert Dias (United States Geological Survey) and Elizabeth Minor (University of Minnesota-Duluth).

### **Postgraduate Mentors**

Kenneth Mopper (Old Dominion University); Patrick Hatcher (Old Dominion University).