

Exponent®
Engineering & Scientific Consulting

Noor Aly, Ph.D.

Managing Scientist | Health Sciences
Alexandria
+1-571-227-7224 | naly@exponent.com

Professional Profile

Dr. Aly is a toxicologist with an interdisciplinary background in biology, chemistry, and environmental and regulatory toxicology. Her doctoral thesis focused on the development of a novel analytical method for rapid exposure assessment of complex environmental samples, particularly as it relates to disaster response.

Dr. Aly has six years of laboratory research experience and is skilled in analytical chemistry techniques, including LC-MS, GC-MS, ICP-MS, and RapidFireTM Solid Phase Extraction- Ion Mobility Spectrometry – Mass Spectrometry (SPE-IMS-MS). She brings this expertise to bear on a range of technical areas, including safety assessments for medical devices and pharmaceuticals, and environmental risk assessments.

Prior to joining Exponent, Dr. Aly earned her Ph.D. in Toxicology from Texas A&M University and earned a BS in Biology and an MS in Environmental Health at Washington State University. She also worked in a post-Master's internship at Pacific Northwest National Labs (PNNL). As a research associate in the Texas A&M Superfund Center, she was directly involved in exposure assessment efforts all the way from on-site sample collection, to development of analytical techniques and analysis of biological and environmental samples. Dr. Aly has also completed a 40-hour HAZWOPER training and Incident Command System and Emergency Operations training. Dr. Aly has presented her work at various regional and national conferences, published in peer-reviewed scientific journals, and is an active member of both the Society of Toxicology and the Society of Environmental Toxicology and Chemistry.

Academic Credentials & Professional Honors

Ph.D., Toxicology, Texas A&M University, 2021

M.S., Environmental Science, Washington State University, 2017

B.S., Biology, Washington State University, 2015

National Institute of Environmental Health Sciences Superfund Research Program Trainee, 2018-2021

National Institute of Health T32 Trainee Fellowship, 2018

Annual Texas A&M Toxicology Symposium Travel Award 2021

Licenses and Certifications

40-Hour Hazardous Waste Operation and Emergency Response Certification (HAZWOPER)

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8-Hour HAZWOPER Managers and Supervisor Training

Disaster Research Training Workshop Certification

Prior Experience

Toxicology Intern, Shell, 2019

Masters Intern - Post Masters Research Assistant, Pacific Northwest National Laboratory, 2015-2018

Professional Affiliations

Society of Toxicology (SOT) – 2019 to present

- Graduate Student Leadership Committee (GSLC), (Served as Graduate Student Representative, 2021-present)
- Arab Toxicologists Association, (Served as Graduate Student Representative, 2020-present)
- Education and Career Development Committee (Served as Graduate Student Representative, 2020-2021)

Society of Environmental Toxicology and Chemistry (SETAC) – 2021 to present

Languages

Arabic

Spanish

Publications

Aly, N.A., Dodds, J.N., Luo, YS. et al. Utilizing ion mobility spectrometry-mass spectrometry for the characterization and detection of persistent organic pollutants and their metabolites. (2022). Anal Bioanal Chem, (414), 1245–1258.

Roman-Hubers, A.T., Cordova, A.C., Aly, N.A., McDonald, T.J., Lloyd, D.T., Wright, F.A., Baker, E. S., Chiu, W.A., & Rusyn, I. Data Processing Workflow to Identify Structurally Related Compounds in Petroleum Substances Using Ion Mobility Spectrometry–Mass Spectrometry. (2021). Energy & Fuels, 35(13), 10529-10539.

Valdiviezo, A., Aly, N.A., Luo, YS., Cordova, A., Casillas, G., Foster, M., Baker, E. S., & Rusyn, I. Analysis of per- and polyfluoroalkyl substances in Houston Ship Channel and Galveston Bay following a large-scale industrial fire using ion-mobility-spectrometry-mass spectrometry. (2021) Journal of Environmental Sciences, (115), 350-362.

Aly, N.A., Casillas, G., Luo, YS. et al. Environmental impacts of Hurricane Florence flooding in eastern North Carolina: temporal analysis of contaminant distribution and potential human health risks. (2021) J Expo Sci Environ Epidemiol., (5), 810-822

Luo, Y.-S., Aly, N. A., McCord, J., Strynar, M. J., Chiu, W. A., Dodds, J. N., Baker, E. S., & Rusyn, I. (2020). Rapid Characterization of Emerging Per- and Polyfluoroalkyl Substances in Aqueous Film-Forming Foams Using Ion Mobility Spectrometry–Mass Spectrometry. Environmental Science &

Technology, 54(23), 15024–15034.

Aly, N. A., Luo, Y.-S., Liu, Y., Casillas, G., McDonald, T. J., Kaihatu, J. M., Jun, M., Ellis, N., Gossett, S., Dodds, J. N., Baker, E. S., Bhandari, S., Chiu, W. A., & Rusyn, I. (2020). Temporal and spatial analysis of per and polyfluoroalkyl substances in surface waters of Houston ship channel following a large-scale industrial fire incident. Environmental Pollution, (265), 115009.

Zheng, X., Smith, F. B., Aly, N. A., Cai, J., Smith, R. D., Patterson, A. D., & Baker, E. S. (2019). Evaluating the structural complexity of isomeric bile acids with ion mobility spectrometry. Analytical and Bioanalytical Chemistry, 411(19), 4673–4682.

Kyle, J. E., Aly, N., Zheng, X., Burnum-Johnson, K. E., Smith, R. D., & Baker, E. S. (2018). Evaluating lipid mediator structural complexity using ion mobility spectrometry combined with mass spectrometry. Bioanalysis, 10(5), 279–289.

Zheng, X., Dupuis, K. T., Aly, N. A., Zhou, Y., Smith, F. B., Tang, K., Smith, R. D., & Baker, E. S. (2018). Utilizing ion mobility spectrometry and mass spectrometry for the analysis of polycyclic aromatic hydrocarbons, polychlorinated biphenyls, polybrominated diphenyl ethers and their metabolites. Analytica Chimica Acta, 1037, 265–273.

Zheng, X., Aly, N. A., Zhou, Y., Dupuis, K. T., Bilbao, A., Paurus, V. L., Orton, D. J., Wilson, R., Payne, S. H., Smith, R. D., & Baker, E. S. (2017). A structural examination and collision cross section database for over 500 metabolites and xenobiotics using drift tube ion mobility spectrometry. Chem. Sci., 8(11), 7724–7736.

Deng, L., Ibrahim, Y. M., Baker, E. S., Aly, N. A., Hamid, A. M., Zhang, X., Zheng, X., Garimella, S. V. B., Webb, I. K., Prost, S. A., Sandoval, J. A., Norheim, R. V., Anderson, G. A., Tolmachev, A. V., & Smith, R. D. (2016). Ion Mobility Separations of Isomers based upon Long Path Length Structures for Lossless Ion Manipulations Combined with Mass Spectrometry. ChemistrySelect, 1(10), 2396–2399.

Presentations

Aly, N.A., Dodds, J.N., Luo, YS. et al. Utilizing ion mobility spectrometry-mass spectrometry for the characterization and detection of persistent organic pollutants and their metabolites. Poster Presentation, SETAC, Virtual, November 2021

Aly, N.A., Dodds, J.N., Luo, YS. et al. Utilizing ion mobility spectrometry-mass spectrometry for the characterization and detection of persistent organic pollutants and their metabolites. Poster Presentation, Annual Texas A&M Toxicology Symposium, September 2021

Aly, N.A., Casillas, G., Luo, YS. et al. Environmental impacts of Hurricane Florence flooding in eastern North Carolina: temporal analysis of contaminant distribution and potential human health risks. Poster Presentation, Superfund Research Program, Virtual, December 2020

Aly, N.A., Casillas, G., Luo, YS. et al. Environmental impacts of Hurricane Florence flooding in eastern North Carolina: temporal analysis of contaminant distribution and potential human health risks. Poster Presentation, Lone Star Society of Toxicology, Virtual, November 2020

Aly, N.A., Luo, YS., Roman-Hubers, A.T. et al. Reproducibility of Collision Cross Section Measurements with Ion Mobility Mass Spectrometry-Mass Spectrometry. Poster Presentation, Society of Toxicology, International Union of Toxicology, Honolulu, HI, July 2019

Aly, N. A., Luo, Y.-S., Liu, Y., Casillas, G., McDonald, T. J., Kaihatu, J. M., Jun, M., Ellis, N., Gossett, S., Dodds, J. N., Baker, E. S., Bhandari, S., Chiu, W. A., & Rusyn, I. (2020). Temporal and spatial analysis of per and polyfluoroalkyl substances in surface waters of Houston ship channel following a large-scale industrial fire incident. Poster Presentation, Superfund Research Program, Seattle, WA, November

2019Aly, N.A., Luo, YS., Roman-Hubers, A.T. et al. Enabling High-Throughput Exposomics by Developing a Library of 4000+ Environmental Chemicals for SPE-Ion Mobility-Mass Spectrometry. Poster Presentation, Superfund Research Program, Sacramento, CA, November 2018Aly, N.A., Luo, YS., Roman-Hubers, A.T. et al. Enabling High-Throughput Exposomics by Developing a Library of 4000+ Environmental Chemicals for SPE-Ion Mobility-Mass Spectrometry. Poster Presentation, Lone Star Society of Toxicology, Austin, TX, October 2018