

Dr. Alvina Mehinto

Department Head

Toxicology Department

Southern California Coastal Water Research Project

Education

Ph.D., biological sciences, University of Exeter, United Kingdom, 2010

B.S. (hons), marine biology, University of Portsmouth, United Kingdom, 2005

Professional Experience

Department Head, Southern California Coastal Water Research Project. Costa Mesa, CA. 2020-present

Principal Scientist, Southern California Coastal Water Research Project. Costa Mesa, CA. 2019-2020

Senior Scientist, Southern California Coastal Water Research Project. Costa Mesa, CA. 2016-2019

Scientist, Southern California Coastal Water Research Project. Costa Mesa, CA. 2013-2016

Visiting Postdoctoral Researcher, University of Berkeley. Berkeley, CA. 2012

Postdoctoral Research Associate, University of Florida. Gainesville FL. 2010-2012

Visiting PhD Student, University of Sussex. Falmer, United Kingdom. 2008

Graduate Teaching Assistant, University of Exeter. United Kingdom. 2005-2009

Committees and Panels

Santa Monica Bay Restoration Commission, Technical Advisory Council (2022-present)

Genome Canada, Research Oversight Committee Chair, iTrackDNA: Non-Destructive Precision

Genomics for Environmental Impact Tracking Project (2021-present)

Oregon State University SeaGrant, Stakeholder Advisory Panel Microplastics in Oregon's waters: Connecting seafood studies to policy solutions (2021-2022)

Global Water Research Coalition, Technical Advisory Committee for Effect-Based Monitoring in Water Safety Planning (2019-2022)

Water Research Foundation, CEC Technical Advisory Committee (2018-2021)

National Water Research Institute, Bioanalytical Implementation Advisory Group (2019-2020)

City of San Diego Public Works, Interview Panel for Supervising Biologist position (2016)

Postdoctoral Affairs Advisory Committee, University of Florida (2011-2012)

African Student Union Faculty Advisor, University of Florida (2011-2012)

Ad Hoc Reviewer for: Genome Canada (2020-present), Ontario Research Fund (2019) US EPA (2019-2021)

Society Memberships and Offices

Member, Society of Environmental Toxicology and Chemistry (SETAC) (2011-present)

Member, Southern California Chapter SETAC (2013-present); Co-Secretary (2018-2021); Board Member (2017-2018)

Program Committee, SETAC North America 41st Annual Meeting (SETAC SciCon2) (2019-2020)

Member, SETAC North America Awards and Fellowships Committee (2014-2016)

Member, Society of Toxicology (2015-present)

Editorial Responsibilities

Associate Editor, Chemosphere (2020-2022)

Associate Editor, Environmental Toxicology and Chemistry (2020-2022)

Guest Editor, Toxics Special Issue "Impacts of Agrochemicals on Aquatic Ecosystems: Assessing Responses across Biological Scales" (2020-2021)

Editorial Board: Environmental Science and Technology Letters (2020-present), Environmental Toxicology and Chemistry (2017-2020)

Ad Hoc Reviewer for: Water Research, Environmental Science and Technology, Chemosphere, Environment International, Environmental Pollution, Aquatic Toxicology

Honors and Awards

KC Donnelly Externship Award, NIEHS Superfund Research Program (2011)

SfAM President's Fund Award (2008)

Student Travel Grant, Society for General Microbiology (2008)

Student Travel Grant, Society for General Microbiology (2007)

University of Exeter, PhD studentship (2005-2009)

Wiley-Steentoft Prize for Marine Biology, University of Portsmouth (2005)

Selected Presentations and Conference Proceedings

Mehinto, A.C. Critical elements to facilitate endorsement and implementation of bioassays in regulatory policies. Organization for Economic Co-operation and Development (OECD), Developing Science-Informed Policy Responses to Curb Endocrine Disruption in Freshwater. October 19, 2022. Via Zoom

Mehinto, AC. Proposed management strategies to assess chemical contaminants and microplastics in California aquatic habitats. Oregon State University, Winter Seminar Series of the Department of Fisheries, Wildlife and Conservation Sciences. March 09, 2022. Via webinar.

Mehinto, A.C. Health-based microplastics thresholds for ambient waters. San Francisco Bay Regional Monitoring Program (RMP) Workgroup Meeting, September 27, 2021. Via webinar.

Mehinto, A. Cell assay technology for CEC screening in ambient waters. California State Water Board Science Advisory Panel for CECs in California's Aquatic Ecosystems. October 14, 2020. Via webinar.

Mehinto, A.C. Bioanalytical tools for water quality monitoring: Assessing emerging contaminants in recycled and ambient waters. American Water Works Association California-Nevada Section

Annual Fall Conference. October 23, 2019. San Diego, CA.

Mehinto, A.C. Bioanalytical screening tools - An emerging technology to assess complex mixtures in aquatic environments. WaterReuse Webcast Series. May 15, 2019

Mehinto A.C., Maruya K.A. Pilot testing cell-based receptor assays to screen for emerging contaminants and assess risks in aquatic ecosystems. SETAC North America Focused Topic Meeting on High-throughput Screening and Environmental Risk Assessment. April 16-18, 2018. Durham, NC.

Mehinto A. 2017. Linking bioanalytical methods to biological effects. State Water Board Workshop on Constituents of Emerging Concern and Aquatic Ecosystem Monitoring. May 1, 2017. Sacramento, CA, USA.

Mehinto A. 2017. New bioanalytical screening tools to monitor constituents of emerging concern. California Regional Water Quality Control Board, San Diego Region, April 12, 2017. San Diego, CA.

Mehinto A.C, Jayasinghe B.S., Kroll K., Bay S., Maruya K., Denslow N. 2014. Linkages between in vitro assays, molecular biomarkers and traditional toxicity endpoints using the inland silverside *Menidia beryllina*. Oral presentation at 35th North American Society of Environmental Toxicology and Chemistry Conference, Vancouver, BC, Canada.

Mehinto, A.C., B. Gaytan, R.C. Colli-Dula, V. DeLa Rosa, C. Vulpe, and N.D. Denslow. 2012. Comparative toxicogenomic analyses to elucidate the mechanisms of toxicity of SRP chemicals. Invited speaker at the 25th Annual Superfund Research Program Conference. Raleigh, NC.

Mehinto, A.C., D. Martinovic-Weigelt, and N.D. Denslow. 2012. Estrogenic contribution of wastewater effluent and its impact of fish transcriptomic profile. Presented at the 7th International Symposium on Fish Endocrinology. Buenos Aires, Argentina.

Mehinto, A.C., K.J. Kroll, D.S. Barber, and N.D. Denslow. 2011. Assessment of cadmium toxicity in the liver and gonads of adult largemouth bass (*Micropterus salmoides*) using microarrays. Presented at the SETAC 32nd North American Society of Environmental Toxicology and Chemistry Conference. Boston, MA.

Mehinto, A.C., H.E. Elks, E.M. Hill, S.K. Burton, and H.M. Lappin-Scott. 2008. Fate of human pharmaceuticals in the aquatic environment: biodegradation and toxicity on aquatic microbes. Presented at the Society for General Microbiology Spring Meeting. Edinburgh, United Kingdom.

Mehinto, A.C., E.M. Hill, S.K. Burton, and H.M. Lappin-Scott. 2008. Ecotoxicity and biodegradability of the pharmaceutical diclofenac in the aquatic environment. Presented at the 12th International Symposium on Microbial Ecology. Cairns, Australia.

Journal Articles

Rogers, J.D., F.D.L. Leusch, B. Chambers, K.D. Daniels, L.J. Everett, R. Judson, K. Maruya, A.C. Mehinto, P.A. Neale, K. Paul-Friedman, R. Thomas, S.A. Snyder, J. Harrill. 2024. High-Throughput Transcriptomics of Water Extracts Detects Reductions in Biological Activity with Water Treatment Processes. *Environmental Science & Technology* 58:2027-2037.

Mehinto, A.C., B. Du, E. Wenger, Z. Tian, E.P. Kolodziej, D. Apeti, K.A. Maruya. 2023. Bioanalytical and non-targeted mass spectrometric screening for contaminants of emerging concern in Southern California bight sediments. *Chemosphere* 331:138789.

Thornton Hampton, L.M., H. Bouwmeester, S.M. Brander, S. Coffin, M. Cole, L. Hermabessiere, A.C. Mehinto, E. Miller, C.M. Rochman, S.B. Weisberg. 2022. Research recommendations to better understand the potential health impacts of microplastics to humans and aquatic ecosystems. *Microplastics and Nanoplastics* 2:18.

Mehinto, A.C., S. Coffin, A.A. Koelmans, S.M. Brander, M. Wagner, L.M. Thornton Hampton, A.G. Burton, E. Miller, T. Gouin, S.B. Weisberg, C.M. Rochman. 2022. Risk-based management framework for microplastics in aquatic ecosystems. *Microplastics and Nanoplastics* 2:17.

Thornton Hampton, L.M., H. Lowman, S. Coffin, E. Darin, H. De Frond, L. Hermabessiere, E. Miller, V.N. de Ruijter, A. Faltynkova, S. Kotar, L. Monclus, S. Siddiqui, J. Volker, S. Brander, A.A. Koelmans, C.M. Rochman, M. Wagner, A.C. Mehinto. 2022. A living tool for the continued exploration of microplastic toxicity. *Microplastics and Nanoplastics* 2:13.

Maruya, K.A., W. Lao, D.R. Vandervort, R. Fadness, M. Lyons, A.C. Mehinto. 2022. Bioanalytical and chemical-specific screening of contaminants of concern in three California (USA) watersheds. *Heliyon* 8:e09534.

Brander, S.M., J.W. White, B.M. DeCourten, K. Major, S.J. Hutton, R.E. Connon, A.C. Mehinto. 2022. Accounting for transgenerational effects of toxicant exposure in population models alters the predicted long-term population status. *Environmental Epigenetics* 8(1):1-12.

Mehinto, A.C., J. Smith, E. Wenger, B. Stanton, R. Linville, B.W. Brooks, M.A. Saluta, M.D.A. Howard. 2021. Synthesis of ecotoxicological studies on cyanotoxins in freshwater habitats - Evaluating the basis for developing thresholds protective of aquatic life in the United States. *Science of the Total Environment* DOI:10.1016/j.scitotenv.2021.148864.

Mehinto, A.C., L.M. Thornton Hampton, D.E. Vidal-Dorsch, N. Garcia-Reyero, M.A. Arick, K.A. Maruya, W. Lao, C.D. Vulpe, M. Brown-Augustine, A. Loguinov, S.M. Bay. 2021. Transcriptomic response patterns of hornyhead turbot (*Pleuronichthys verticalis*) dosed with polychlorinated

biphenyls and polybrominated diphenyl ethers. *Comparative Biochemistry and Physiology - Part D: Genomics and Proteomics* DOI:10.1016/j.cbd.2021.100822.

Mehinto, A.C., H.L. Schoenfuss, E. Wenger, D.W. Diehl, S.M. Bay. 2021. Application of an Effects-Based Monitoring Strategy to Assess the Impact of Contaminants on Fish Health in an Urbanized Watershed. *Environmental Toxicology and Chemistry* 40:402-412.

Martyniuk, C.J., A.C. Mehinto, R.C. Colli-Dula, K.J. Kroll, N.J. Doperalski, D.S. Barber, N.D. Denslow. 2020. Transcriptome and physiological effects of toxaphene on the liver-gonad reproductive axis in male and female largemouth bass (Micropterus salmoides). *Comparative Biochemistry and Physiology - Part D* DOI:10.1016/j.cbd.2020.100746.

DeCourten, B.M., J.P. Forbes, H.K. Roark, N.P. Burns, K.M. Major, J.W. White, J. Li, A.C. Mehinto, R.E. Connon, S.M. Brander. 2020. Multigenerational and Transgenerational Effects of Environmentally Relevant Concentrations of Endocrine Disruptors in an Estuarine Fish Model. *Environmental Science & Technology* DOI:10.1021/acs.est.0c02892.

Major, K.M., B.M. DeCourten, J. Li, M. Britton, M.L. Settles, A.C. Mehinto, R.E. Connon, S.M. Brander. 2020. Early Life Exposure to Environmentally Relevant Levels of Endocrine Disruptors Drive Multigenerational and Transgenerational Epigenetic Changes in a Fish Model. *Frontiers in Marine Science* DOI:10.3389/fmars.2020.00471.

Martyniuk, C.J., A.C. Mehinto, N.D. Denslow. 2020. Organochlorine pesticides: Agrochemicals with potent endocrinedisrupting properties in fish. *Molecular and Cellular Endocrinology* DOI:10.1016/j.mce.2020.110764.

Mehinto, A.C., K.J. Kroll, B.S. Jayasinghe, C.M. Lavelle, D. VanDervort, O.K. Adeyemo, S.M. Bay, K.A. Maruya, N.D. Denslow. 2018. Linking In Vitro Estrogenicity to Adverse Effects in the Inland Silverside (Menidia beryllina). *Environmental Toxicology and Chemistry* 37:884-892.

Mehinto, A.C., D.R. VanDervort, W. Lao, G. He, M.S. Denison, S.M. Vliet, D.C. Volz, R.D. Mazor, K.A. Maruya. 2017. High throughput in vitro and in vivo screening of inland waters of Southern California. *Environmental Science: Processes and Impacts* 19:1142-1149.

Martinovic-Weigelt, D., A.C. Mehinto, G.T. Ankley, J.P. Berninger, T.W. Collette, J.M. Davis, N.D. Denslow, E.J. Durhan, E. Eid, D.R. Ekman, K.M. Jensen, M.D. Kahl, C.A. LaLone, Q. Teng, D.L. Villeneuve. 2017. Derivation and Evaluation of Putative Adverse Outcome Pathways for the Effects of Cyclooxygenase Inhibitors on Reproductive Processes in Female Fish. *Toxicological Sciences* 156:344-61.

Vidal-Dorsch, D.E., S.M. Bay, S.L. Moore, B. Layton, A.C. Mehinto, C.D. Vulpe, M. Brown-Augustine, A. Loguinov, H. Poynton, N. Garcia-Reyero, E.J. Perkins, L. Escalon, N.D. Denslow, C.R.

Colli-Dula, T. Doan, S. Shukradas, J. Bruno, L. Brown, G. Van Agglen, P. Jackman, M. Bauer. 2016. Ecotoxicogenomics: Microarray interlaboratory comparability. *Chemosphere* 144:193-200.

Mehinto, A.C., B.S. Jayasinghe, D.R. Vandervort, N.D. Denslow, K.A. Maruya. 2016. Screening for Endocrine Activity in Water Using Commercially-available In Vitro Transactivation Bioassays. *Journal of Visualized Experiments* 118:e54725.

Crago, J., E.G. Xu, A. Kupsco, F. Jia, A.C. Mehinto, W. Lao, K.A. Maruya, J. Gan, D. Schlenk. 2016. Trophic transfer and effects of DDT in male hornyhead turbot (*Pleuronichthys verticalis*) from Palos Verdes Superfund site, CA (USA) and comparisons to field monitoring. *Environmental Pollution* 213:940-948.

Mehinto, A.C., A. Jia, S.A. Snyder, B. Sumith Jayasinghe, N.D. Denslow, J. Crago, D. Schlenk, C. Menzie, S.D. Westerheide, F.D.L. Leusch, K.A. Maruya. 2015. Interlaboratory comparison of in vitro bioassays for screening of endocrine disrupting chemicals in recycled water. *Water Research* 83:303-309.

Maruya, K.A., N.G. Dodder, A.C. Mehinto, N.D. Denslow, D. Schlenk, S.A. Snyder, S.B. Weisberg. 2015. A Tiered, Integrated Biological and Chemical Monitoring Framework for Contaminants of Emerging Concern in Aquatic Ecosystems. *Integrated Environmental Assessment and Management* 12:540-547.

Mehinto, A.C., M.S. Prucha, R.C. Colli-Dula, K.J. Kroll, C.M. Lavelle, D.S. Barber, C.D. Vulpe, N.D. Denslow. 2014. Gene networks and toxicity pathways induced by acute cadmium exposure in adult largemouth bass (*Micropterus salmoides*). *Aquatic Toxicology* 152:186-194.

Escher, B.I., M. Allinson, R. Altenburger, P.A. Bain, P. Balaguer, W. Busch, J. Crago, N.D. Denslow, E. Dopp, K. Hilscherova, A.R. Humpage, A. Kumar, M. Grimaldi, B.S. Jayasinghe, B. Jarosova, A. Jia, S. Makarov, K.A. Maruya, A. Medvedev, A.C. Mehinto, J.E. Mendez, A. Poulsen, E. Prochazka, J. Richard, A. Schifferli, D. Schlenk, S. Scholz, F. Shiraiishi, S. Snyder, G. Su, J.Y.M. Tang, B. van der Burg, S.C. van der Linden, I. Werner, S.D. Westerheide, C.K.C. Wong, M. Yang, B.H.Y. Yeung, X. Zhang, F.D.L. Leusch. 2014. Benchmarking organic micropollutants in wastewater, recycled water and drinking water with in vitro bioassays. *Environmental Science and Technology* 48:1940-1956.

Christiansen, H.E., A.C. Mehinto, F. Yuc, R.W. Perry, N.D. Denslow, A.G. Maule, M.G. Mesa. 2014. Correlation of gene expression and contaminant concentrations in wild largescale suckers: A field-based study. *Science of the Total Environment* 484:379-389.

Martinovic-Weigelt, D., A.C. Mehinto, G.T. Ankley, N.D. Denslow, L.B. Barber, K.E. Lee, R.J. King, H.L. Schoenfuss, A.L. Schroeder, D.L. Villeneuve. 2014. Transcriptomic Effects-Based Monitoring for Endocrine Active Chemicals: Assessing Relative Contribution of Treated Wastewater to

Downstream Pollution. *Environmental Science and Technology* 48:2385-2394.

Mehinto, A.C., C.J. Martyniuk, D.J. Spade, and N.D. Denslow. 2012. Applications for next-generation sequencing in fish ecotoxicogenomics. *Frontiers in Genetics* 3:62.

Lorenzi, V., A.C. Mehinto, N.D. Denslow, and D. Schlenk. 2012. Effects of exposure to the beta-blocker propranolol on the reproductive behavior and gene expression of the fathead minnow, *Pimephales promelas*. *Aquatic Toxicology* 116-117:8-15.

Sellin-Jeffries, .M.K., A.C. Mehinto, B. Carter, N.D. Denslow, and A.S. Kolok. 2012. Taking microarrays to the field: Differential hepatic gene expression of caged fathead minnows from Nebraska watersheds. *Environmental Science and Technology* 46:1877-1885.

Huang, T., H.V. Deoghare, B.K. Smith, T.M. Beaver, H.V. Baker, A.C. Mehinto, and D.A. Martin. 2011. Gene expression changes in the human diaphragm following cardiothoracic surgery. *Journal of Thoracic and Cardiovascular Surgery* 142:1214-1222.

Mehinto, A.C., E.M. Hill, and C.R. Tyler. 2010. Uptake and biological effects of environmentally relevant concentrations of the non-steroidal anti-inflammatory pharmaceutical diclofenac in rainbow trout (*Oncorhynchus mykiss*). *Environmental Science and Technology* 44:2176-2182.

Book Chapters

Mehinto, A.C., S.M. Brander, S. Siddiqui. 2024. Adverse Outcome Pathways and Their Relevance. in: S. Siddiqui, S.M. Brander (eds.), *Aquatic Ecotoxicology: Understanding Pollutants, Aquatic Organisms, and their Environments* pp. 139-145. Springer Cham. New York, NY.

Technical Reports

Mehinto, A.C., V. McGruer, E. Darin, K. Wong, D. Schlenk. 2024. Development and Standardization of Bioanalytical Screening Tools Part I - Final Report. Technical Report 1381.A. Southern California Coastal Water Research Project. Costa Mesa, CA.

Mehinto, A.C., V. McGruer, D. Schlenk. 2024. Development and Standardization of Bioanalytical Screening Tools Part II - Protocols for Laboratory and Data Analysis. Technical Report 1381.B. Southern California Coastal Water Research Project. Costa Mesa, CA.

Mehinto, A.C., E. Darin, D.J. Greenstein, K. Wong. 2024. Screening for Emerging Contaminants in the Santa Ana Region. Technical Report 1358. Southern California Coastal Water Research Project. Costa Mesa, CA.

Maruya, K.A., A.C. Mehinto, W. Lao, R. Sutton, T. Jabusch, J. Sun, D. Lin, J. Davis, R. Fadness. 2018. Pilot Monitoring of Constituents of Emerging Concern (CECs) in the Russian River Watershed (Region 1). Technical Report 1020. Southern California Coastal Water Research Project. Costa Mesa, CA.

Denslow, N., K. Kroll, S. Jayasinghe, O. Adeyemo, C. Lavelle, E. Li, A.C. Mehinto, S.M. Bay, K.A. Maruya. 2017. Linkage of In Vitro Assay Results With In Vivo Endpoints Final Report - Phase 1 and 2. Technical Report 983. San Francisco Estuary Institute. Richmond, CA.

Dodder, N.G., A.C. Mehinto, K.A. Maruya. 2015. Monitoring of Constituents of Emerging Concern (CECs) in California's Aquatic Ecosystems - Pilot Study Design and QA/QC Guidance. Technical Report 854. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.