Helen C. Poynton
Professor of Molecular Ecotoxicology
School for the Environment
University of Massachusetts Boston
100 Morrissey Blvd., Boston, MA 02125-3393
(617) 287-7323 helen.poynton@umb.edu

EDUCATION AND TRAINING

Temple University, Philadelphia	Biochemistry	BSc, 2000
University of CA, Berkeley	Molecular/Biochemical Nutrition (Vulpe)	PhD, 2007
U.S. Environmental Protection Agency	Molecular Indicators (Lazorchak)	Postdoc, 2007-2010

PROFESSIONAL APPOINTMENTS

Graduate Research Assistant	UC Berkeley	2000-2007
ORISE Post-doctoral Fellow	U.S. EPA	2007-2009
Post-doctoral Fellow	U.S. EPA	2009-2010
Assistant Professor	University of Massachusetts Boston	2010-2016
Associate Professor	School for the Environment, UMass Boston	2016- 2022
Professor	School for the Environment, UMass Boston	2022-
Undergraduate Program Director	School for the Environment, UMass Boston	2019 -

HONORS

EPA Science to Achieve Results (STAR) Fellowship	2004-2007
Oak Ridge Institute for Science and Education Postdoctoral Fellowship	2007-2009
UMass Boston, Endowed Faculty Career Development Award	2013
UMass Boston, Chancellor's Award for Distinguished Teaching	2021

PEER-REVIEWED PUBLICATIONS (**undergraduate and *graduate student advisees):

2025:

54) San Antonio C*, **Poynton H**, Krick K**, Hannigan R. 2025. Ocean warming and acidification alter calcification and innate immune system gene expression in juvenile American lobsters, Homarus americanus. *Comparative Biochemistry and Physiology Part D: Genomics and Proteomics.* 54:101404. https://doi.org/10.1016/j.cbd.2024.101404

2024:

53) Evensen, KG*, Rusin, E**, Robinson, WE, Price, CL, Kelly, SL, Lamb, DC, Goldstone, JV, **Poynton, HC**. 2024. Vertebrate endocrine disruptors induce sex-reversal in blue mussels. *Sci Rep.* 14:23890. https://doi.org/10.1038/s41598-024-74212-y.

2023:

52) Evensen, KG*, Figueroa, AE**, Goncalves, AM**, Chan, TJ**, Vu, EB**, Hounain, I**, **Poynton, HC**. 2023. Prevalence and effects of a parasitic trematode on the blue mussel,

Mytilus edulis, in the Boston Harbor. *Experimental Parasitology.* 254: 108624. https://doi.org/10.1016/j.exppara.2023.108624

51) Gamble, NE, Huff Hartz, KE, Figueroa, AE**, **Poynton, HC**, Lydy, MJ. 2023. Development of insecticide resistance in *Hyalella azteca. Environmental Pollution.* 322:121165. https://doi.org/10.1016/j.envpol.2023.121165.

2022:

50) Pillet, M, Evensen, KG*, Marengo, M, Lejeune, P, **Poynton, HC**, Thomas, H. (2022) First insight into the development of a new transcriptomic tool in French Corsica harbors. *Marine Pollution Bulletin.* 184:114173. https://doi.org/10.1016/j.marpolbul.2022.114173.

49) Major, KM*, Weston, DP, Wellborn, GA, Lydy, MJ, **Poynton HC**. (2022) Predicting resistance: Quantifying the relationship between urban development, agricultural pesticide use, and pesticide resistance in a non-target amphipod. *Environmental Science and Technology.* https://doi.org/10.1021/acs.est.2c04245.

48) Derby, AP, Huff Hartz, KE, Fuller, NW, Landrum, PF, Reeve, JD, **Poynton, H**, Connon, RE, Lydy, MJ. (2022) Effects of temperature and salinity on bioconcentration and toxicokinetics of permethrin in pyrethroid-resistant *Hyalella azteca*. *Chemosphere*. 229:134393.

47) Evensen, KG*, Robinson, WE, Krick, K**, Murray, HM, **Poynton HC**. (2022) Comparative phylotranscriptomics reveals putative sex differentiating genes across eight diverse bivalve species. *Comparative Biochemistry and Physiology Part D: Genomics and Proteomics*. 41:100952.

2021:

46) Fuller, N, Huff Hartz, KE, Johanif, N*, Magnuson, JT, Robinson, EK, Fulton, CA, **Poynton, HC**, Connon, RE, Lydy, MJ. (2021) Enhanced trophic transfer of chlorpyrifos from resistant *Hyalella azteca* to inland silversides (*Menidia beryllina*) and effects on acetylcholinesterase activity and swimming performance at varying temperatures. *Environmental Pollution.* 291: 118217.

45) Johanif, N*, Huff Hartz, KE, Figueroa, AE**, Weston, DP, Lee, D**, Lydy, MJ, Connon, RE, **Poynton, HC**. (2021) Bioaccumulation potential of chlorpyrifos in resistant *Hyalella azteca*: Implications for evolutionary toxicology. *Environmental Pollution.* 289: 117900.

44) Fung CY, Zhu KY, Major K*, **Poynton HC**, Hartz KE, Wellborn G, Lydy MJ. (2021) The contribution of detoxification pathways to pyrethroid resistance in *Hyalella azteca*. *Environmental Pollution*. 284: 117158.

43) Huff Hartz, KE, Weston, DP, Johanif, N*, **Poynton, HC**, Connon, RE, Lydy, MJ. (2021) Pyrethroid bioaccumulation in field-collected insecticide-resistant *Hyalella azteca. Ecotoxicology*. 30 (3): 514-23.

42) Fulton, CA, Hartz, KEH, Fuller, NW, Kent, LN, Anzalone, SE, Miller, TM, Connon, RE, **Poynton, H**. and Lydy, MJ. (2021) Fitness costs of pesticide resistance in *Hyalella azteca* under future climate change scenarios. *Science of The Total Environment*. 753: 141945.

2020:

41) Sever, HC, Heim, JR, Lydy, VR, Fung, CY, Hartz, KEH, Giroux, MS, Andrzejczyk, N, Major, KM*, **Poynton, HC,** Lydy, MJ. (2020) Recessivity of pyrethroid resistance and limited interspecies hybridization across *Hyalella* clades supports rapid and independent origins of resistance. *Environmental Pollution*. 266 (1):115074.

40) Major, KM*, Weston, DP, Lydy, MJ, Huff Hartz, KE, Wellborn, GA, Manny, AR**, **Poynton, HC**. (2020) The G119S *ace*-1 mutation confers adaptive organophosphate resistance in a nontarget amphipod. *Evolutionary Applications.* 13 (4) 620-635.

39) Di Carlo, E*, Boullemant, A, **Poynton, H**, Courtney, R. (2020) Exposure of earthworm (Eisenia fetida) to bauxite residue: Implications for future rehabilitation programmes. *The Science of the Total Environment*, 716: 137126. DOI: 10.1016/j.scitotenv.2020.137126

38) Blalock, BJ*, Robinson, WE, **Poynton, HC**. (2020) Assessing legacy and endocrine disrupting pollutants in Boston Harbor with transcriptomic biomarkers. *Aquatic Toxicology*. 220:105397. DOI: 10.1016/j.aquatox.2019.105397.

37) Thomas, GWC, Dohmen, E, Hughes DST, Murali, SC, Poelchau, M, Glastad, K, Anstead, CA, Ayoub, NA, Batterham, P, Bellair, M, Binford, GJ, Chao, H, Chen, YH, Childers, C, Dinh, H, Doddapaneni, HV, Duan, JJ, Dugan, S, Esposito, LA, Friedrich, M, Garb, J, Gasser, RB, Goodisman, MAD, Gundersen-Rindal, DE, Han, Y, Handler, AM, Hatakeyama, M, Hering, L, Hunter, WB, Ioannidis, P, Jayaseelan, JC, Kalra, D, Khila, A, Korhonen, PK, Lee, CE, Lee, SL, Li, Y, Lindsey, ARI, Mayer, G, McGregor, AP, McKenna, DD, Misof, B, Munidasa, M, Munoz-Torres, M, Muzny, DM, Niehuis, O, Osuji-Lacy, N, Palli, SR, Panfilio, KA, Pechmann, M, Perry, T, Peters, RS, **Poynton, HC**, Prpic, NM, Qu, J, Rotenberg, D, Schal, C, Schoville, SD, Scully, ED, Skinner, E, Sloan, DB, Stouthamer, R, Strand, MR, Szucsich, NU, Wijeratne, A, Young, ND, Zattara, EE, Benoit, JB, Zdobnov, EM, Pfrender, ME, Hackett, KJ, Werren, JH, Worley, KC, Gibbs, RA, Chipman, AD, Waterhouse, RM, Bornberg-Bauer, E, Hahn, MW, Richards, S. (2020) Gene content evolution in the arthropods. *Genome Biol* **21,** 15 (2020). DOI: 10.1186/s13059-019-1925-7.

36) Oziolor, EM, DeSchamphelaere, K, Lyon, D, Nacci, D, **Poynton, HC**. (2020) Evolutionary Toxicology – an informational tool for chemical regulation? *Environ Toxicol Chem.* 39(2), 257-268. DOI: 10.1002/etc.4611

2019:

35) Connon, RE, Hasenbein, S, Brander, SM, **Poynton, HC**, Holland, EB, Schlenk, D, Orlando, JL, Hladik, ML, Collier, TK, Scholz, NL, Incardona, JP, Denslow, ND, Hamdoun, A, Nicklisch, S, Garcia-Reyero, N, Perkins, EJ, Gallagher, EP, Deng, X, Wang, D, Fong, S, Breuer, RS, Hajibabei, M, Brown, JB, Colbourne, JK, Young, TM, Cherr, G, Whitehead, A, Todgha, A. (2019) Review and Recommendations for Monitoring

Contaminants and their effects in the San Francisco Bay-Delta. *San Francisco Estuary and Watershed Science.* 17(4): 1-42. DOI:10.15447/sfews.2019v17iss4art2.

34) Osborne, KL*, **Poynton, HC**. (2019) Copper pollution enhances the competitive advantage of invasive ascidians. *Management of Biological Invasions.* 10(4): 641-56. DOI: 10.3391/mbi.2019.10.4.05

33) Weston, D, Moschet, C, Young, T, Johanif, N*, **Poynton, H**, Major, K*, Connon, R, Hasenbein, S. (2019) Chemical and toxicological impacts to Cache Slough following storm-driven contaminant inputs. *San Francisco Estuary and Watershed Science.* 17(3). DOI:10.15447/sfews. 2019v17iss3art3

32) Fairbrother, A, Muir, D, Solomon, KR, Ankley, GT, Rudd, MA, Boxall, ABA, Adams, WJ, Apell, JN, Armbrust, KL, Blalock, BJ*, Bowman, S, Campbell, LM, Cobb, GP, Connors, KA, Dreier, DA, Evans, MS, Henry, CJ, Hoke, RA, Houde, M, Klaine, SJ, Klaper, RD, Kullik, SA, Lanno, RP, Meyer, C, Ottinger, MA, Oziolor, E, Petersen, EJ, **Poynton, HC**, Rice, PJ, Rodriguez-Fuentes, G, Samel, A, Shaw, JR, Steevens, JA, Verslycke, TA, Vidal-Dorsch, DE, Weir, SM, Wilson, P, Brooks, BW. (2019) Towards Sustainable Environmental Quality: Priority Research Questions for North America. *Environmental Toxicology and Chemistry.* 38(8): 1606-24. DOI: 10.1002/etc.4502.

31) **Poynton, HC**, Chen, C, Alexander, SL**, Major, KM*, Blalock, BJ*, Unrine, JM. (2019) Enhanced toxicity of environmentally transformed ZnO nanoparticles relative to Zn ions in the epibenthic amphipod Hyalella azteca, *Environmental Science: Nano*. 6(1):325-40. DOI: 10.1039/C8EN00755A.

2018:

30) Russo, C, Isidori, M, Deaver, JA**, **Poynton, HC**. (2018) Toxicogenomic responses of low level anticancer drug exposures in *Daphnia magna*. *Aquat Toxicol.* 203:40-50. https://doi.org/10.1016/j.aquatox.2018.07.010

29) Hasenbein, S, **Poynton, H**, Connon, RE. (2018) Contaminant exposure effects in a changing climate: how multiple stressors can multiply exposure effects in the amphipod *Hyalella azteca. Ecotoxicology*. 27(7): 845-859.

28) Blalock, BJ*, Robinson, WE, Loguinov, A, Vulpe, CD, Krick, KS**, **Poynton, HC**. (2018) Transcriptomic and Network Analyses Reveal Mechanistic-Based Biomarkers of Endocrine Disruption in the Marine Mussel, *Mytilus edulis, Environ Sci Technol.* 53(16): 9419-9430. ***Cover Article***. (Aug 21, 2018)

27) Major, KM*, Weston, DP, Lydy, MJ, Wellborn, GA, **Poynton, HC** (2018) Unintentional exposure to terrestrial pesticides drives widespread and predictable evolution of resistance in freshwater crustaceans. *Evolutionary Applications.* 11(5): 748-761. DOI: 10.1111/eva.12584

26) **Poynton, HC**, Hasenbein, S, Benoit, JB, Sepulveda MS, Poelchau, MF, Hughes, DST, Murali, SC, Chen, S, Glastad, KM, Goodisman, MAD, Werren, JH, Vineis, JH, Bowen, JL,

Friedrich, M, Jones, J, Robertson, Feyereisen, R, Mechler-Hickson, A, Mathers, N, Lee, CE, Colbourne, JK, Biales, A, Johnston, JS, Wellborn, GA, Rosendale, AJ, Cridge, AG, Munoz-Torres, MC, Bain, PA, Manny, AR**, Major, KM*, Lambert, FN, Vulpe, CD, Tuck, P**, Blalock, BJ*, Lin, Y-Y, Smith, ME, Ochoa-Acuña, H, Chen, M-JM, Childers, CP, Qu, J, Dugan, S, Lee, SL, Chao, H, Dinh, H, Han, Y, Doddapaneni, HV, Worley, KC, Muzny, DM, Gibbs, RA, Richards, S. (2018) The Toxicogenome of *Hyalella azteca*: a model for sediment ecotoxicology and evolutionary toxicology. *Environmental Science and Technology.* 52(10): 6009- 6022. DOI: 10.1021/acs.est.8b00837

25) Osborne, KL*, Hannigan, RE, **Poynton HC** (2018) Differential copper toxicity in invasive and native ascidians of New England provides support for enhanced invader tolerance. *Marine Ecology Progress Series* 595:135-147. https://doi.org/10.3354/meps12555.

24) Christie, AE, Cieslak, MC, Roncalli, V, Lenz, PH, Major, KM*, **Poynton, HC** (2018) Prediction of a peptidome for the ecotoxicological model *Hyalella azteca* (Crustacea; Amphipoda) using a de novo assembled transcriptome. *Marine Genomics*. 38: 67-88.

23) Weston, DP, **Poynton, HC**, Major, K*, Wellborn, G, Lydy, MJ, Moschet, C, Connon, RE, (2018) Using mutations for pesticide resistance to identify the cause of toxicity in environmental samples. *Environ Sci Tech*. 52(2): 859-867.

22) Heim, JR, Weston, DP, Major, KM*, **Poynton, HC**, Huff Hartz, KE, Lydy, MJ. (2018) Are there fitness costs of pyrethroid resistance in the amphipod, *Hyalella azteca*? *Environ Pollut.* 235:39-46.

2016:

21) Chen, S, Nichols, KM, **Poynton, HC**, Sepúlveda, MS, (2016) MicroRNAs are involved in cadmium tolerance in *Daphnia pulex*. *Aquat Toxicol.* 175:241-248.

20) Ricciardi, K, **Poynton, H,** Duphily, B, Blalock, B*, Robinson, W. (2016) Bioconcentration and depuration of 14C-labeled 17-α-ethinyl estradiol and 4-nonylphenol in individual organs of the marine bivalve, *Mytilus edulis* L. *Environ. Toxicol. Chem.* 35 (4): 863–873

19) Vidal-Dorsch, DE, Bay, SM, Moore, S, Layton, B, Mehinto, AC, Vulpe, CD, Brown-Augustine, M, Loguinov, A, **Poynton, H,** Garcia-Reyero, N, Perkins, EJ, Escalon, L, Denslow, ND, Colli-Dula, RC, Doan, T, Shukradas, S, Bruno, J, Brown, L, Van Agglen, G, Jackman, P, Bauer, M. (2016) Ecotoxicogenomics: microarray interlaboratory comparability. *Chemosphere.* 144, 193-200.

2015:

18) Weston, D, **Poynton, H,** Lydy, MJ, Wellborn, G. (2015) Adaptation, not acclimation, is the likely mechanism for reduced sensitivity of some wild *Hyalella* populations to pyrethroid insecticides. *Environ. Toxicol. Chem.* 34 (10), 2188-2190.

2014:

17) **Poynton, HC,** Robinson, WE, Blalock, BJ*, Hannigan, RE. (2014) Correlation of transcriptomic responses and metal bioaccumulation in *Mytilus edulis* L. reveals early indicators of stress. *Aquat Toxicol.* 155, 129–141.

2013:

16) Weston, DP, **Poynton, HC,** Wellborn, GA, Lydy, MJ, Blalock, BJ*, Sepulveda, MS, Colbourne, J. (2013) Multiple origins of pyrethroid insecticide resistance across the species complex of a non-target aquatic crustacean, *Hyalella azteca***.** *Proc. Nat. Acad. Sci. USA*. 110 (41), 16532-16537.

15) Antczak, P, Jo, HJ, Woo, S, Scanlan, LD, **Poynton, HC,** Loguinov, AV, Chan, S**, Falciani, F, Vulpe, C. (2013) The molecular toxicity identification evaluation (mTIE) approach predicts chemical exposure in *Daphnia magna*. *Environ. Sci. Technol.* 47 (20), 11747-11756.

14) **Poynton, HC,** Lazorchak, JM, Impellitteri, CA, Blalock, BJ*, Smith, ME, Struewing, K, Unrine, JM, Roose, D. (2013) Toxicity and transcriptomic analysis in *Hyalella azteca* suggests increased exposure and susceptibility of epibenthic organisms to zinc oxide nanoparticles. *Environ. Sci. Technol.* 47 (16), 9453–9460.

2012:

13) **Poynton, HC**, Lazorchak, JM, Impellitteri, CA, Blalock, BJ*, Rogers, K, Allen, HJ, Loguinov, A, Heckman, JL, Govindasmawy, S. (2012) Toxicogenomic responses of nanotoxicity in *Daphnia magna* exposed to silver nitrate and coated silver nanoparticles. *Environ. Sci. Technol.* 46 (11), 6288-6296.

2011:

12) **Poynton, HC**, Taylor, NS, Hicks, J, Colson, K, Chan, S**, Clark, C, Scanlan, L, Loguinov, AV, Vulpe, C, Viant, MR. (2011) Metabolomics of microliter hemolymph samples enables an improved understanding of the combined metabolic and transcriptional responses of *Daphnia magna* to cadmium. *Environ. Sci. Technol.* 45 (8), 3710–3717.

11) Patra, M, Ma, X, Isaacson, C, Bouchard, D, **Poynton, H,** Lazorchak, JM, Rogers, KR. (2011) Changes in agglomeration of fullerenes during ingestion and excretion in *Thamnocephalus platyurus. Environ. Toxicol. Chem*. 30 (4), 828-35.

10) **Poynton, HC,** Lazorchak, J, Impellitteri, C, Smith, ME, Rogers, K, Patra, M, Hammer, K, Allen, J, Vulpe, C. (2011) Differential gene expression in *Daphnia magna* suggests distinct modes of action and bioavailability for ZnO nanoparticles and Zn ions. *Environ. Sci. Technol.* 45 (2), 762-768.

2010:

9) Allen, HJ, Impellitteri, CA, Macke, DA, Heckman, JL, **Poynton, HC,** Lazorchak, JM, Govindaswamy, S., Roose, D.L., Nadagouda, M.N. (2010) Effects from filtration, capping agents, and presence/absence of food on the toxicity of silver nanoparticles to *Daphnia magna*. *Environ. Toxicol. Chem*. 29 (12), 2742-50.

2009:

8) Garcia-Reyero, N, **Poynton, HC,** Kennedy, AJ, Guan, X, Escalon, BL, Chang, B**, Varshavsky, J**, Loguinov, AV, Vulpe, CD, Perkins, E.J. (2009) Biomarker discovery and transcriptomic responses in *Daphnia magna* exposed to munitions constituents. *Environ. Sci. Technol.* 42 (11), 4199-93.

7) **Poynton, HC,** Vulpe, CD. (2009) Ecotoxicogenomics: emerging technologies for emerging contaminants. *J. American Water Resources Association.* 45 (1), 83-96.

2008:

6) **Poynton, HC,** Loguinov, AV, Varshavsky, JR**, Chan, S**, Vulpe CD. (2008) Gene expression profiling in *Daphnia magna* Part I: Concentration dependent gene expression profiles provide support for a No Observed Transcriptional Effect Level in *Daphnia magna. Environ. Sci. Technol.* 42 (16), 6250-6.

5) **Poynton, HC,** Zuzow, R, Loguinov, AV, Perkins EJ, Vulpe CD. (2008) Gene expression profiling in *Daphnia magna* Part II: Validation of a copper specific gene expression signature with effluent from two copper mines in California. *Environ. Sci. Technol.* 42 (16), 6257-63.

Prior to 2008:

4) **Poynton, HC,** Varshavsky, JR**, Chang, B**, Cavigiolio, G, Chan, S**, Holman, PS, Loguinov, AV, Bauer, DJ, Komachi, K, Theil, EC, Perkins, EJ, Hughes, O, Vulpe, CD. (2007) *Daphnia magna* Ecotoxicogenomics Provides Mechanistic Insights into Metal Toxicity. *Environ. Sci. Technol*. 41 (3), 1044-50. (Included in the "Top Ten Most Cited Papers of 2007" in *Environ. Sci. Technol.*)

3) De Freitas, JM, Kim, JH, **Poynton, HC,** Su, T, Wintz, H, Fox, TC, Holman, PS, Loguinov, AV, Keles, S, Van Der Laan, M., Vulpe, C.D. (2004) Exploratory and confirmatory gene expression profiling of mac1. *J. Biol. Chem.* 279 (6), 4450-8.

2) De Freitas, J, Wintz, H, Kim, JH, **Poynton, H,** Fox, T,Vulpe, C. (2003) Yeast, a model organism for iron and copper metabolism studies. *Biometals.* 16 (1), 185-97.

1) Zhang, ZP, Hutcheson, JM, **Poynton, HC,** Gabriel, JL, Soprano, KJ, Soprano, DR. (2003) Arginine of retinoic acid receptor beta which coordinates with the carboxyl group of retinoic acid functions independent of the amino acid residues responsible for retinoic acid receptor subtype ligand specificity. *Arch. Biochem. Biophys.* 409 (2), 375-84.

Peer reviewed book chapters:

5) Estrada-Martinez, L, Negrón, R, Colón, JL, Nazario, CM, **Poynton, H,** Hernández-Talavera, V*, Oyola-Vivas, A, Linde-Arias, AR (2024) Consequences of and Responses to Compounded Vulnerabilities Rooted in Colonialism: The Case of Vieques, P.R., in *Climate Justice and Health*, R. Srikanth, R, and Thompson, L., eds., University of Massachusetts Press.

4) **Poynton, HC.** (2019) Insights from 'Omics on Ecological Exposure and Effects of Engineered Nanomaterials. In *Ecotoxicology of Nanoparticles in Aquatic Systems.* Eds. Corsi, I. and Blasco, J. CRC Press Taylor & Francis Group. pp.189-207.

3) **Poynton, HC,** Robinson, WE. (2018) Contaminants of Emerging Concern, With an Emphasis on Nanomaterials and Pharmaceuticals. In *Green Chemistry*: *an Inclusive Approach*; Torok, B., Dransfield, T., Eds.; Elsevier: Cambridge, MA, 2018; pp 291-315.

2) **Poynton, HC,** Wintz, H, Vulpe, CD. Progress in ecotoxicogenomics for environmental monitoring, mode of action, and toxicant identification. In *Advances in Experimental Biology 2: Comparative Toxicogenomics*; Hogstrand, C., Kille, P., Eds.; Elsevier: Oxford, 2008; Vol. 2, pp 21-73.

1) Perkins, EJ, Denslow, N, Chipman, JK, Guiney, PD, Oris, JR, **Poynton, HC,** Robidoux, PY, Scroggins, R, Van Der Kraak, G. Application of genomics to assessment of the ecological risk of complex mixtures. In *Genomics in Regulatory Ecotoxicology: Applications and Challenges*; Ankley, GT, Miracle, AL, Perkins EJ, Daston, GP. Eds.; SETAC Press: Pensacola, FL, 2008, pp 87-122.

RESEARCH SUPPORT (total of $6.2 million awarded in external funding):

1) Poynton, H. (Principal), Robinson, W. (Co-Principal), Chen, R. (Co-Principal). Development and validation of the coastal biosensors for endocrine disruption (C-BED) assay. **MIT-Seagrant**. $149,999 (2/1/13 – 10/31/15).

2) Poynton, H. (Principal), Unrine, J. (Co-Principal; University of Kentucky). Characterization of environmental transformation, exposure from sediment, and toxicity (E-TEST) for ZnO nanomaterials in natural systems. **National Science Foundation (C-BET).** $177,690 (9/1/14 – 8/31/18).

3) Weston, D. (Principal; UC Berkely), Poynton, H.C. (Co- Principal), Young, T. (Co-Principal; UC Davis). Integrated chemical and genomic assessment of contaminant effects on invertebrate fish prey in Cache Slough. **State and Federal Contractors Water Agency.** $324,733 (10/1/14- 4/30/17).

4) Robinson, W. (Principal), Poynton, H.C. (Co-Principal). Tracking the Evolution of Critical Proteins Through the Bivalvia. **Ruth D. Turner Foundation**. $12,000 (12/15/15-12/14/16).

5) Christian, A. (Principal), Poynton, H.C. (Co-Principal). REU Site: Coastal Research in Environmental Science and Technology (CREST) at UMass Boston. **National Science Foundation.** $314,640 (4/1/2017 -3/31/2020).

6) Connon, R., (Principal; UC Davis), Poynton, H.C. (Co-Principal), Fangue, N. (Co-Principal; UC Davis), Hung, T-C. (Co-Principal; UC Davis), Brander, S. (Co-Principal; Oregon State University), Lydy, M. (Co-Principal; Southern Illinois University). Contaminant Effects on Two California Fish Species and the Food Web That Supports Them. **California**

Department of Fish and Wildlife. $209,338 (sub-award to UMB) (07/01/2017 – 12/31/2020).

7) Poynton, H.C. (Principal), Tlusty, M. (Co-Principal). REU Site: Coastal Research in Environmental Science and Technology (CREST) at UMass Boston. **National Science Foundation (OCE).** $358,947 (4/1/2020 -3/31/2023).

8) Estrada-Martinez, L. (Principal), Chen, R.F. (Co-Principal), Colon-Carmona, A. (Co-Principal), Poynton, H.C. (Co-Principal), Rivera, L. (Co-Principal). EPA Community-Driven Assessment of Environmental Health Risks in Vieques, Puerto Rico. **U.S. Environmental Protection Agency.** $800,000. (05/01/2020 – 04/30/24).

9) Connon, R., (Principal; UC Davis), Poynton, H.C. (Co-Principal), Lydy, M. (Co-Principal; Southern Illinois University). Impacts of Storm-driven Contaminants on larval Delta Smelt and the community scale adaptive capacity of prey items to handle those stressors. **California Department of Fish and Wildlife**. $169,066 (sub-award to UMB) (09/01/2020 – 12/31/2023).

10) Johannesson, K. (Principal), Poynton, H.C. (Co-Principal). Acquisition of a high resolution inductively coupled plasma mass spectrometer and ion chromatograph for environmental biochemical research and teaching at UMass Boston. **National Science Foundation.** $496,796. (9/1/21-8/31/24).

11) Poynton, H.C. (Principal), Siegfried, K. (Co-Principal), Robinson, W. (Co-Principal). Investigating Conserved Function of Male and Female Developmental Genes in a Model Bivalve. **National Science Foundation (BIO: Animal Developmental Mechanism).** $202,137. (7/15/21-7/14/24).

12) Poynton, H.C. (Principal), Estrada-Martinez, L. (Co-Principal), Amelie Segarra (Co-Principal; UC Davis), Richard Connon (Co-Principal; UC Davis), Thomas Young (Co-Principal; UC Davis), and Liz M. Díaz-Vázquez (Co-Principal; University of Puerto Rico-PR). Whole animal New Approach Methodologies for predicting developmental effects of air pollutant mixtures. **US Environmental Protection Agency.** $750,000. (10/1/2022 – 9/30/2025).

13) Goldstone, J. (Principal, WHOI), Poynton, H. (Co-Principal) Evaluating innovative technologies to reduce the impact of septic system contaminants on ecological keystone species, **National Oceanic and Atmospheric Administration. WHOI Sea Grant**, $225,000.00, (2/1/2024 – 1/31/2027).

14) Poynton, H. (Principal), Kulak, T. (Co-Investigator) Biodiversity and Insecticide Sensitivity of Nantucket Bog Spiders, **Nantucket Biodiversity Initiative**, $3,374.00, (6/1/2024 – 02/15/2025).

15) Estrada-Martínez, L., (Principal), Sweet, E. (Co-Principal), Tlusty, M. (Co-Principal), Poynton, H. (Co-Principal), Colón-Carmona, A. (Co-Principal), Nazario, C. (Co-Principal, UPR-MSC), Díaz-Vázquez, L. (Co-Principal , UPR-RP), Ortiz-Zayas, J. (Co-Principal , UPR-RP), Hernández-Correa, J. (Co-Principal , UPR-M). Community-driven assessment of cumulative impacts on health, food, and water security in Vieques, PR, **US Environmental**

Protection Agency. $2,000,000. (2/1/2025 – 1/31/2028). AWARDED, terminated 5/2025 by Trump Administration.

16) Poynton, H. (Principal), Kulak, T. (Co-Investigator) Macroinvertebrate Diversity of a Restored Nantucket Wetland, **Nantucket Biodiversity Initiative**, $3,491.00, (6/1/2025 – 02/15/2026).

Cooperative Agreements:

1) Poynton, H. (Principal). TEMASAV: Technologies and environmental monitoring for the sustainability of wide areas. Cooperative agreement between The Second University of Naples and the University of Massachusetts Boston. $8,000 (2/1/15 – 6/30/15).

Proposals acting as Collaborator:

1) Stiles, S. (PI, Milford NOAA Lab), Goldstone, J. (collaborator, WHOI); Poynton, H. (collaborator); Robinson, W. (collaborator); Tlusty, M. (collaborator); Lindell, S. (collaborator, WHOI) ICAF Proposal: Genomics-assisted Breeding of the Blue Mussel to Increase and Sustain Aquaculture Production, **NOAA internal award**, $200,000 (6/1/18-5/31/21).

2) Courtney, R. (PI, University of Limerick); Poynton, H. (collaborator) Analysis of biomarkers in earthworms exposed to different rehabilitated bauxite residues, **Science Foundation Ireland**. (1/1/18- 12/31/21).

Proposals funded through University of Massachusetts:

1) Poynton, H. (Principal), Robinson, W. (Co-Principal) Family planning along the coastline: human birth control compounds and the reproductive health of the blue mussel *Mytilus edulis*. **Joseph P. Healey Research Grant Program.** $7,500 (6/1/12 – 6/30/13).

2) Robinson, W. (Principal), Zhou, M. (Co-Principal, Chen, R. (Co-Principal), Lee, Z. (Co-Principal, Poynton, H. (Co- Principal), Schaaf, C. (Co-Principal). Boston Harbor-Mass Bay: laboratory for urban and coastal environmental science (LUCES). **University of Massachusetts.** $120,000 (7/1/13 – 7/1/15).

3) Poynton, H. (Principal). Does adaptation to pollution adversely affect natural populations? **University of Massachusetts Boston, Endowed Faculty Career Development Award.** $3,500 (10/1/13 - 8/31/14).

4) Poynton, H.C. (Principal), Robinson, W. (co-Principal) Sterilizing the sea: investigating the extent of sex reversal in marine mussels from birth control compounds. **Joseph P. Healey Research Grant Program.** $7,500 (7/1/15 - 6/30/16).

5) Courtney, R. (Principal), Poynton, H.C. (co-Principal), Use of biomarkers for assessing stress in organisms exposed to mine spoils. **University of Limerick- UMass Boston Strategic Alliance Joint Seed Funding Program.** $10,000 (1/1/16-12/31/17).

TEACHING & INNOVATIVE PEDOGOGY (*new course developed)

ENVSCI260 Global Environmental Change (3 credits; >90 students; taught each Spring) This course examines the cross-disciplinary interactions and cycles that cause global environmental change and the impact of human activities on natural earth-ecosystem processes, including global warming, pollution, deforestation, and biodiversity reduction. An important theme through this class is how the Earth System maintains a stable equilibrium to sustain life through feedback loops and biogeochemical cycles, and how life itself has helped to establish this stability. *Pedagogical Innovations: This course adopted the World Climate simulation, which engages with students to attempt to negotiate a UN climate treaty that will keep the world's temperature from rising no more 1.5^{o}C. This simulation is run as a 3-hour weekend workshop.*

ENVSCI318 Environmental Toxicology* (3 credits, new course Fall 2021, taught every other Fall) This course investigates the major chemical contaminant classes including their chemical properties and methods for measuring them and focuses on mechanisms of toxicity including genotoxicity, immunotoxicity, and endocrine disruption. The course emphasizes how impacts at the cellular and biochemical levels cascade up levels of biological organization resulting in population, community, and ecosystem effects. *Pedagogical Innovations: This course uses multiple case studies and primary literature to reinforce main concepts and will provide practical training in conducting ecological risk assessments.*

ENVSCI316 Marine Pollution* (3 credits; 25-30 students; taught every other Fall) Beginning with a brief introduction of coastal and marine ecology, this course then investigates the major causes of environmental degradation to coastal and marine ecosystems. The impacts of eutrophication, climate change and ocean acidification, invasive species, plastic pollution and oil spills on environmental quality and the cascading effects on ecosystems are discussed. *Pedagogical Innovations: This course prepares students for graduate study by emphasizing reading of the primary literature and uses a journal club format to help students practice and reading and presenting scientific data. This course is taught as BEACONFLEX, or a hybrid modality to allow students who are not able to come to campus to participate remotely.*

ENVSCI317 Marine Pollution Laboratory* (2 credits; 8-12 students; taught with Marine Pollution) This course explores specific topics of importance in coastal and marine pollution including emerging contaminants and toxicity testing, endocrine disruption and biomarkers, eDNA for aquatic organism detection, and microplastics monitoring. The course will enable students to explore specific experiments in detail, learning elements of experimental design, hypothesis testing, and formal scientific writing. *Pedagogical Innovations: This course was originally developed in 2017 as a Broader Impacts project from a NSF grant and is divided into four major experimental modules that span several weeks. Students collect "real" environmental data, learn methods to analyze this data, and are challenged to interpret it and write a final manuscript-style lab report at the end of semester on one of modules using the entire class data set. Students peer-critique each other's work in writing workshops. In*

response to COVID-19, we modified the experiments to be "Do it yourself" (DIY) laboratory exercises and field trips, where most of them could be carried out at home with "kits" we supplied to all the students. Demonstration videos were pre-recorded and provided for step-by-step instruction. Given the success of this remote laboratory course, we included a proposal in a recently awarded NSF grant to further develop an online DIY laboratory course to broaden access to lab classes for working students.

ENVSCI/BIOL665 Ecological Risk Assessment* (3 credits; 8-13 students; Sp2014, Sp2016) This is a graduate level course designed to provide instruction in the formal practice of Ecological Risk Assessment (ERA) and was originally envisioned to be part of the Professional Master MS in Environmental Science. *Pedagogical Innovations: The course uses case studies to demonstrate the ERA approach and is highly student driven in terms of the topics covered. Students complete two independent projects on Stressor Identification and Ecological Risk Assessment to gain practical experience.*

Coastal Research in Environmental Science and Technology REU (CREST-REU) (10-week summer research experience funded by NSF, co-director 2016-19; director 2020-2023) This is a research/ educational program designed to expose 8 undergraduates per year to cutting edge, integrative, coastal environmental science research. The research or educational niche filled by CREST deals with the transdisciplinarity of coastal research, which closely parallels the strengths of the School for the Environment at UMass Boston. Students also participate in a number of planned cohort building activities, professional development, career exploration, and received training in scientific ethics and anti-harassment in science.

SCIENTIFIC LEADERSHIP

i) Massachusetts State Science Advisory Committees

Toxic Use Reduction Act (TURA) Science Advisory Board (2020- pres.), appointed by the MA governor, Charles Baker, by authorization of the *Toxic Use Reduction Act of 1989*. The primary objective of the Science Advisory Board is review current literature on toxic chemical substances and make recommendations for listing or deleting chemicals from the Toxic or Hazardous Substance (TURA) chemical list. Chemicals on the TURA list are subject to reporting and regulation by the Massachusetts Department of Environmental Protection.

Mosquito Control for the Twenty-First Century Task Force (2020- 2022), appointed by the MA Secretary of Energy and Environmental Affairs, Kathleen Theoharides by authorization of *An Act to Mitigate Arbovirus in the Commonwealth.* This task force was charged with recommending "comprehensive reforms of the commonwealth's mosquito control system." I contributed by providing written summaries and presentations of ecotoxicological studies on the effects of mosquito control insecticides. I authored four recommendations, one of which received unanimous support by the full task force and was included in a final report to the MA legislative on March 31, 2022.

ii) Enhancement of graduate and undergraduate student research experiences:

Research Experience for Undergraduates (NSF-REU) mentor (2011-pres.), co-director (2016-2019), director (2020- 2023); UMass Boston Research Continuity Committee

(2020-2021); UMass Boston Coasts and Communities *Integrative Graduate Education and Research Traineeship (*IGERT, funded by NSF) Steering Committee member, and mentor (2014-2019); ERASMUS Training Program in Aquatic Ecosystem Health (funded by NSERC Canada) Program Committee member (2014-2016); faculty mentor for Sanofi Genzyme or Oracle Undergraduate/Graduate Research Fellowships, McNair Fellowship Program, and Bridges to the Baccalaureate Fellowship program (2014-pres)

iii) Development of genomic resources for environmental research:

Lead investigator for *Hyalella azteca* genome project within the i5k project (2012-2018)

Eastern Oyster Genome Consortium member and consultant (2014-pres)

Contributor of transcriptomic resources and tools for *Hyalella azteca, Mytilus edulis,* and *Daphnia magna* (2007-pres.)

iv) Professional societies and advisory committees:

Scientific Committee and Program Committee Organizer for Society of Environmental Toxicology and Chemistry Annual Meeting, Sacramento, CA 2017-2018.

Steering Committee Member, Society of Environmental Toxicology and Chemistry (SETAC) EVOGENERATE (Evolutionary Toxicology) advisory group (2013-pres.)

SETAC Horizon Scanning Workshop participant to identify 40 top questions in Environmental Science (2015-2019)

v) Community outreach:

"Know your Pond, Save your Pond" Urban Pond Research, Education, and Outreach Program presented to students and community members of Boston and the surrounding suburbs through community events and workshops (2014-pres.)

Sustainable Sharon Coalition, Board member, a community environmental advocacy organization. Serve as a technical toxicologist for the organization on issues such as PFAS contamination and pesticides and helped organize an Environmental Justice webinar in 2020. (2020-pres.)

vi) Peer Review Activities:

- Review panelist for NIEHS Oceans and Human Health Program and Superfund Program, NSF Biology and Ocean Sciences Directorates, NOAA Sea Grant Program, and EPA Science to Achieve Results Fellowship Program.
- Technical proposal Reviewer for U.S. Army Corps of Engineers, Research and Development Center (ERDC) and the National Oceanic and Atmospheric Administration (NOAA) Seagrant Program, and several international Science agencies in Canada (Natural Sciences and Engineering Research Council of Canada; NSERC), France (National Agency of Research; ANR), Chile (Fondecyt Program, National Research and Development Agency), and Poland (National Science Center).
- Manuscript reviewer for: *Environmental Science and Technology, Nanotoxicology, Environmental Pollution, Aquatic Toxicology, Environmental Toxicology and Chemistry,*

PLoS One, BMC Genomics, Mutagenesis, and *Molecular Ecology,* as well as for the U.S. Environmental Protection Agency's internal technical manuscript review.

vii) Professional Societies:

2002- Member, *Daphnia* Genome Consortium
2005- Member, Society of Environmental Toxicology and Chemistry
2010- Member, North Atlantic Chapter, Society of Environmental Toxicology and Chemistry
2011- Member, Organisation for Economic Co-operation and Development (OECD) Community of Practice for Nanomaterials

viii) Student Advising (Thesis Advisor, Visiting Scholar Mentor, and Independent Study):

Post-doc, visiting scholar:

Chiara De Benedictis (visiting scholar) Fall 2022
Elisa Di Carlo (visiting Ph.D. scholar) Fall 2017, Spring 2019
Simone Hasenbein (visiting scholar) Spring 2016
Chiara Russo (International Visiting Scholar) Spring 2015

PhD students:

Bonnie Blalock (Ph.D. awarded Dec. 2018, winner of Discovery and Innovation Award) 2012-2018.
Kaley Major (Ph.D., awarded Dec. 2018, winner of Legacy Award) 2013-2018.
Kristin Osborne (Ph.D., awarded Dec. 2017) 2012-2017.
K. Garrett Evensen (Ph.D. awarded May 2023) 2018-2023.
Valeria Hernandez Talavera (Ph.D.) 2020-pres.
Irina A Polunina (Ph.D.) 2020-pres.
Alyssa Goncalves (Ph.D.) 2023 -pres.

Masters students:

Nabilah Nadhirah Ahmad Johanif (M.S., awarded May 2021) 2018-2021.
Taryn Broughal (M.S.) 2023 – pres.
Tyler Kulak (M.S.) 2025 – pres.

External PhD examiner/committee member:

Emily Armstrong, Deakin University, Warrnambool, Australia. Great Australian Bight decapods: potential crude oil molecular biomonitoring tools. 2023.

Nermeen Raffet Mahmoud Hussein Amer, Cairo University, Egypt. Effect of water pollution on development and antipredatory behavior of *Culex pipiens* larvae (Diptera: Culicidae), 2021.

Katherine Jeppe, The University of Melbourne, Australia, Contaminant Exposure Affects Gene Expression Markers in the Cysteine Metabolism of *Chironomus tepperi*, 2015.

Guangquan Chen, Vrije Universiteit Amsterdam, The Netherlands, New tools for assessment of soil toxicity in the bio-based economy, 2016.

Shuai Chen, Purdue University, The Role of *Daphnia pulex* microRNAs in Response to Short-term and Multi-generational Cadmium Acclimation, 2015.

Undergraduate students (** papers published or in prep):

Bryce Moy (undergrad, honors thesis) Spring 2025
Maya James (undergrad, honors thesis) Spring 2024
Tyler Kulak (undergrad, honors thesis) Fall 2023
Elijah Wallace (undergrad, REU) Summer 2023
Anistacia Allston (undergrad, REU) Summer 2023
Spencer Caddigan (undergrad, independent study) 2022- pres.
Alyssa Goncalves** (undergrad, REU) Summer 2022
Zengel Chin (undergrad, REU) Summer 2022
Alexandria Figueroa** (undergrad, REU, honors thesis) 2019- 2022.
Isaac Hounain** (undergrad, REU) Summer 2021
Tiffany Chan** (undergrad, honors thesis) Spring 2021
Victoria Deery** (undergrad, IMSD Senior fellow) 2019- 2021
Emily Rusin** (undergrad, capstone independent study) Spring 2020
Faye Martin (undergrad, independent study) Fall 2019
Devon Lee** (undergrad, REU) Summer 2019
Jessie Tenaglia (undergrad, honors thesis) 2018-2019
Aleesha Grove** (undergrad, REU) Summer 2018
Catherine Morgan** (undergrad, REU) Summer 2017
Shaun Alexander** (undergrad, Honors Thesis) 2015-2017
Keegan Krick** (undergrad, Honors Thesis) 2016-2017
Jessica Deavers** (undergrad, REU) Summer 2016
Christina Lofton (undergrad, Honors Thesis) 2014-2016
Austin Manny** (undergrad, REU) Summer 2015
Shelly-Ann Wood (undergrad, Bridges; UMass Boston McNair Fellowship) 2015-2016
Cristiana Binkley (undergrad, REU) Summer 2014
Sarah Moore (undergrad, independent study) 2013-2014
Padrig Tuck** (undergrad, Honors Thesis) 2011-2013
Megan Freiberger (undergrad, REU) Summer 2013
Dale A Cormier II (undergrad, independent study) 2012-2013
Hebe Rosado (undergrad, REU), Summer 2012
Nicholas Sapp (undergrad, REU), Summer 2011
Sara Nelson-Owens (undergrad, REU), Summer 2011

viii) Student Advising (Committee member):

Alice Palmer (Ph.D.) UMass Boston, 2019-pres.; Christine San Antonio (Ph.D.), UMass Boston, 2016- 2021; Carolyn Wheeler (Ph.D.), UMass Boston, 2016- 2022; Catie Tobin (PhD), UMass Boston, 2016 – 2021; Kerry McNally (Ph.D.) UMass Boston, 2015- 2020; Robert Holmberg (Ph.D.) UMass Boston, 2015-2019; Charles Major (M.S.) UMass Boston, 2015-2019; Avery Palardy (M.S.) UMass Boston, 2014-2017; Brain Duphily (M.S.) UMass Boston, 2013-2017; Lauren Laskey (M.S.) UMass Boston, 2014-2016; Erin Sullivan (Ph.D. candidate) UMass Lowell, 2013-pres.; Edgar Franck (M.S.) UMass Boston, 2013-2017; Marin Kress (Ph.D.) UMass Boston, 2011- 2015; Shui Chen, (Ph.D.)

Purdue University, 2011-2015; Thomas Angus (Ph.D.) UMass Boston, 2011-2015; David Weisman (Ph.D.) UMass Boston, 2010-2011.

SELECTED PRESENTATIONS & AWARD-WINNING STUDENT PRESENTATIONS (accepted abstracts) (*graduate; **undergraduate student presenter, selected student presentations represent those that received a presentation or travel award):

28) **Poynton, H.C.,** Estrada-Martinez, L., Hernandez Talavera, V.*, Meléndez, K., Negrón, R. Applying Community-Based Participatory Research to Ecotoxicology. Poster presentation at the North American Society of Environmental Toxicology and Chemistry (SETAC) Annual Meeting. Fort Worth, TX, October 20-24, 2024. *Session Chair and Presenter.*

27) **Poynton, H.,** Evensen, K.G.*, Goncalves, A.*, Hernandez-Talavera, V.*, Lamb, D., Goldstone, J. Oral Presentation, Mechanistic Investigation of the effects of Vertebrate Steroid Hormones on Sex Reversal and Differentiation in Blue Mussels., Oral Presentation at the Pollution Response in Marine Organisms, PRIMO meeting, Nantes, FR, May 2024.

26) **Hernandez Talavera, V.*,** Estrada Martinez, L., Poynton, H. Genomics-based Environmental Health Assessment of the Lagoons of Vieques, Puerto Rico. Biannual Coastal & Estuarine Research Federation (CERF) Conference Portland, November 12-16, 2023. *Rising Tides Fellowship and Travel Award.*

25) **Figueroa, A****, Johanif, N*, Poynton, H. Comparing the Growth and Reproduction of Resistant and Non-resistant Populations of *Hyalella azteca.* School for the Environment Research Colloquium. Virtual, April 2021. *Best Undergraduate Student Poster Award.*

24) **Poynton, H,** Lydy, M, Weston, D, Major, K*, Johanif, N*, Huff Hartz, K, Heim, J, Deery, V**, Figueroa, A**, Meyer, F*, Connon, R. A Story of Resistance: Exploring evolutionary mechanisms and implications to extreme insecticide exposures throughout the Bay-Delta Region of California. Poster presentation at the San Francisco Bay Delta Conference. Virtual, April 2021.

23) **Evensen, KG***, Rusin, E, Blalock, B, Robinson, W, Poynton, H. Effects of 17α-Ethinylestradiol (EE2) and Ketoconazole (KZ) on Mytilus edulis Sex Differentiation Gene Expression. Platform Presentation at the North Atlantic Society of Environmental Toxicology and Chemistry (SETAC). Virtual. April 2021. *Best Student Presentation Award.*

22) **Johanif, N*,** Major, KM, Weston, DP, Lydy, MJ, Connon, RE, Poynton, HC. Bioaccumulation of Chlorpyrifos in freshwater amphipods, *Hyalella azteca*. Poster presentation at the North American Society of Environmental Toxicology and Chemistry (SETAC). Virtual, Nov. 2020. *Best Masters Student Poster Award.*

21) **Deery, V****,** Major, K*, Weston, DP, Poynton, HC. Copy Number Variation of Mutated Ace-1 gene involved in Pesticide Resistance in *Hyalella azteca*. Poster presentation at the North American Society of Environmental Toxicology and Chemistry (SETAC). Virtual, Nov. 2020. *Second Place Best Undergraduate Student Poster Award.*

20) **Evensen, KG*,** Blalock, BJ*, Robinson, W, Keegan, K**, Poynton, H. RNA-seq Analysis of *Mytilus edulis* in Polluted Sites. Poster presentation at the Northeast Aquatic Biologists Conference. Providence, RI. March 2020. *Best Student Poster Award.*

19) **Figueroa, A**,** Evensen, KG*, Poynton, HC. Are Worms Eating Our Mussels? The Presence of Infectious Proctoeces maculatus Detected in *Mytilus edulis*. Poster Presentation at the Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting. San Diego, CA, February 2020. *Received ALSO Multi-cultural Student Travel Award to attend and present.*

18) **Evensen, KG*,** Blalock, BJ*, Tenaglia, J**, Robinson, W, Poynton, H. Investigating Spatial Variability in Endocrine Disruption in the Marine Bivalve, *Mytilus edulis*. Poster presentation at the Pollution Responses in Marine Organisms (PRIMO) meeting. Charleston SC, May 2019. *Winner of the Founders Award, Best Student Poster Award.*

17) Blalock, BJ*, Robinson, WE, Evensen, KE*, **Poynton, HC**. Development of the Coastal Biosensor for Endocrine Disruption (C-BED) assay in the blue mussel *Mytilus edulis*. Platform presentation at the Pollution Responses in Marine Organisms (PRIMO) meeting. Charleston SC, May 2019.

16) **Tenaglia, J**,** Evensen, KG*, Bonnie, BJ*, Poynton, HC. A Geospatial Analysis of *Mytilus edulis* along the South Shore. School for the Environment Research Colloquium, UMass Boston, May 2019. *Third Place Best Undergraduate Student Poster Award.*

15) **Johanif, N*,** Major, KM, Weston, DP, Poynton, HC. Prevalence and impacts of chlorpyrifos insecticide resistance in the freshwater amphipod *Hyalella azteca*. School for the Environment Research Colloquium, UMass Boston, May 2019. *Third Place Best Graduate Student Poster Award.*

14) **Blalock, BJ*,** Duphily, B, Krick, K**, Robinson, WE, Poynton, HC. Transcriptomic and Genomic Approaches of Endocrine Disruption Suggest Non-genomic Estrogen Signaling in Mytilus edulis. Oral Presentation during National Shellfish Association (NSA) meeting, Knoxville, TN, March 2017. *Received NSA Student Travel Award to attend and present.*

13) Major, K*, Chen, C, Croteau,M-N, Morgan, C**, Unrine, J, **Poynton, HC**. Understanding comparative toxicity of environmentally transformed ZnO nanoparticles through uptake dynamics and transcriptional responses in the amphipod *Hyalella azteca.* Platform Presentation at the North American Society of Environmental Toxicology and Chemistry (SETAC), Minneapolis, MN, Nov. 2017.

12) **Poynton, HC,** Robinson, WE. Aquaculturomics. Platform Presentation at the Massachusetts Aquaculture Association. Meeting, Woods Hole, MA, Jan. 27, 2017.

11) Major, K*, Weston, D, Lydy, M, Wellborn, G, **Poynton, H**. Pyrethroid insecticide resistance is widespread in the non-target crustacean *Hyalella azteca*. Platform presentation at the Bay-Delta Science Conference, Sacramento, CA, Nov. 15-17, 2016.

10) **Poynton, HC,** Major, KM*, Blalock, B*, Manny, A**, Weston, D, Sepulveda, M, Colbourne, J. Toxicogenome of *Hyalella azteca*: Exploring adaptation and plasticity in response to environmental pollution. Poster Presentation at the Arthropod Genome Symposium, Manhattan, KS, June 17-19, 2015.

9) **Binkley, C.**,** Blalock, B*, Clearly, A, Zhou, M, Durbin, E, Poynton, H. Understanding gene expression in *Euphausia Superba* during quiescence. Poster Presentation at the Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting. Granada, Spain, Feb. 21-27, 2015. *Received ALSO Multi-cultural Student Travel Award to attend and present.*

8) Major, K*, Weston, DP, Tuck, P**, **Poynton, HC.** Development of a genotyping assay to determine the extent of pyrethroid pesticide resistance in members of the *Hyalella azteca* species complex. Platform Presentation at the North American Society of Environmental Toxicology and Chemistry (SETAC), Vancouver, BC, Canada, Nov. 9-13, 2014. *Received a SETAC Student Travel Award to attend and present.*

7) **Poynton, H,** Weston, D, Wellborn, G, Lydy, M, Major, K*, Blalock, B*. Pollution resistance in risk assessment: a case study of rapid adaptation to pesticides in *Hyalella azteca.* Platform Presentation at the North American Society of Environmental Toxicology and Chemistry (SETAC), Vancouver, BC, Canada, Nov. 9-13, 2014.

6) Blalock, B*, Duphily, B, Robinson, W, **Poynton, H,** Development of the coastal biosensor for endocrine disruption (C-BED) Assay. Poster Presentation at the North American Society of Environmental Toxicology and Chemistry (SETAC), Vancouver, BC, Canada, Nov. 9-13, 2014. *Received a SETAC Student Travel Award to attend and present.*

5) Major, K*, **Poynton, H.** Gene expression variation in *Hyalella azteca* laboratory populations under standardized conditions. Poster Presentation at the North American Society of Environmental Toxicology and Chemistry (SETAC), Vancouver, BC, Canada, Nov. 9-13, 2014. *Received a SETAC Student Travel Award to attend and present.*

4) **Poynton, HC,** Blalock, BJ*, Lazorchak, JM, Weston, DP, Wellborn, G, Lydy, M. Genome Sequencing of *Hyalella azteca*: A model for evolutionary toxicology and ecological exposure. Presentation at the North America Society of Environmental Toxicology and Chemistry, Nashville, TN, Nov. 17-21, 2013.

3) **Poynton, HC,** Blalock, BJ*, Lazorchak, JM, Impellitteri, CA, Unrine, JM, Smith, ME. Are sediment dwelling organisms at higher risk for nanoparticle exposure? Characterizing nanoparticle exposure and effects in *Hyalella azteca.* Presentation at the North America Society of Environmental Toxicology and Chemistry, Nashville, TN, Nov. 17-21, 2013.

2) **Poynton, H,** Robinson, W, Blalock, B*, Hannigan, R. Transcriptomic responses to metal bioaccumulation in the blue mussel *Mytilus edulis.* Platform Presentation at the Society of Environmental Toxicology and Chemistry Annual Meeting, Boston MA, November 2011.

1) **Poynton, HC,** Lazorchak, JM, Impellitteri, CA, Smith, ME, Rogers, K, Allen, HJ, Patra, M, Hammer, KA. A genomic approach for biomarker discovery and exposure monitoring of metal-

based nanomaterials in surface waters. Platform Presentation at the Society of Environmental Toxicology and Chemistry Annual Meeting, Portland, OR, Nov. 2010.

Invited Seminars:

9) **Poynton, H**. Sexual Differentiation and Disruption in the Atlantic Blue Mussel. Invited Seminar, Downeast Institute, Beals, ME, October 24, 2023.

8) **Poynton, H**. Mechanisms and Broader Implications of Evolved Pesticide Resistance in a Non-target Crustacean, Invited Seminar, Biology Dept., University of MA, Lowell, Lowell, MA, September 21, 2019.

7) **Poynton, H.,** The Toxicogenome of *Hyalella azteca*, building genomic resources for healthy ecosystems, Featured Speaker, Center for Genome Research & Biocomputing Fall Conference, Oregon State University, Corvallis, October 12, 2018.

6) **Poynton, H.,** Major, K.*, Lydy, M., Wellborn, G., Weston, D. Hasenbein, S., Richards, S., *Hyalella* Genome Consortium. Toxicogenome of *Hyalella azteca:* Exploring adaptation and gene expression in response to environmental pollution. Invited speaker at the Crustacean Models in Cross-Disciplinary Biological Research, Janelia Conference, Ashburn, VA, June 2017.

5) **Poynton, H.,** Emerging tools and frameworks for monitoring marine mussels, key indicators of coastal pollution, Invited Seminar at Woods Hole Oceanographic Institute, Woods Hole, MA, October 22, 2015.

4) **Poynton, H.,** Robinson, W., Blalock, B., Duphily, B., Ricciardi, K., Hannigan, R. Development of the coastal biosensors for endocrine disruption (C-BED) assay reveals implications for human and ecological health, Invited Seminar for MIT Seagrant, Cambridge, MA. April 21, 2015.

3) **Poynton, H.,** Emergence of pesticide resistance in the non-target stream invertebrate *Hyalella azteca*: The role of speciation and convergent evolution, Invited Seminar, Biology Dept., University of MA, Lowell, Lowell, MA, Nov. 7, 2012.

2) **Poynton, H.,** Taking toxicogenomics to sea. What gene expression can tell us about pollution. Invited Presentation, School of Marine Sciences Research Colloquium, UMass, Boston, Jan. 20, 2012.

1) **Poynton, H.C.,** Molecular ecotoxicology: The use of genomic transcriptomic approaches in environmental sciences. Invited Seminar, Department of Forestry and Natural Resources, Purdue University, Sept. 13, 2011.

International Symposium:

2) **Poynton, H.,** Toxicogenome of *Hyalella azteca*, building genomic resources for sediment quality assessment and evolutionary toxicology, International Symposium on Ecogenomics towards a bio-based economy. VU University Amsterdam, Netherlands, March 23, 2016.

1) **Poynton, H.,** Toxicogenomic signatures of pollutant exposure and bioaccumulation in aquatic and marine invertebrates. Invited Presentation, International Symposium on Environmental Genomics, Shanghai Center for Bioinformation Technology, Shanghai, China, Mar 26-29, 2012.