

Joel N. Meyer

Nicholas School of the Environment
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Employment

2013-present. **Duke University**: Associate Professor, Nicholas School of the Environment.

Additional appointments:

Faculty member, Integrated Toxicology and Environmental Health Program, **Duke University** (2007-present)

Secondary appointment, Civil and Environmental Engineering, **Duke University** (2009-present)

Faculty member, Pharmacological Sciences Training Program, **Duke University** (2013-present)

Member, Duke Cancer Institute, **Duke University** (2013-present)

Affiliate, Duke Global Health Institute, **Duke University** (2016-present)

Fixed Term Graduate Faculty, Environmental Science and Engineering, **UNC Chapel Hill** (2013-present)

2007-2013. **Duke University**: Assistant Professor, Nicholas School of the Environment.

2003-2006. **National Institute of Environmental Health Sciences** (RTP, NC): Post-doctoral researcher (Intramural Research Training Award)

1995-1997. **Instituto de Estudios Avanzados José Martí** (Quetzaltenango, Guatemala): High School Teacher (Biology, English) and Program Director (English)

1993-1995. **Centro de Estudios de Español "Pop Wuj"** (Quetzaltenango, Guatemala): Translator and Appropriate Technology Work Projects Coordinator

Education

Postdoctoral training 2003-2006 (mentor: Bennett Van Houten)

DNA Repair and Mitochondrial Damage Group, Laboratory of Molecular Genetics
National Institute of Environmental Health Sciences, RTP, NC

Doctor of Philosophy 2003 (advisor: Richard Di Giulio)

Environmental Toxicology

Integrated Toxicology Program and Nicholas School of the Environment

Duke University, Durham, NC

Bachelor of Science 1992 (Magna Cum Laude)

Environmental Studies, Peace and Conflict Studies

Juniata College, Huntingdon, PA

Honors

Bass Chair for Excellence in Research and Undergraduate Teaching (Truman and Nellie Semans/Alex Brown & Sons Associate Professor of Molecular Environmental Toxicology), 2017

Outstanding New Environmental Scientist Award (NIEHS), 2011

Professional affiliations

Environmental Mutagenesis and Genomics Society

Society of Environmental Toxicology and Chemistry
Society of Toxicology

Peer-reviewed publications

*corresponding author; †undergraduate

h index = 31, i10 index = 53, g index = 62, total citations = 3975 (December 2016, Google Scholar)

81. **Meyer JN*** and Chan SS. **2017**. Sources, mechanisms, and consequences of chemical-induced mitochondrial toxicity. *Toxicology* PMID: in progress.
80. **Meyer JN***, Leuthner TC, Luz AL. **2017**. Mitochondrial fusion, fission, and mitochondrial toxicity. *Toxicology* PMID: in progress.
79. Gonzalez-Moragas L, Maurer LL, Harms VM, **Meyer JN**, Laromaine A, Roig A*. **2017**. Materials science and toxicological approaches to study metal and metal oxide nanoparticles in the model organism *Caenorhabditis elegans*. *Materials Horizons* PMID: in progress.
78. Maurer LL, Luz AL, **Meyer JN***. **2017**. Detection of mitochondrial toxicity of environmental pollutants using *Caenorhabditis elegans*. In *Drug-Induced Mitochondrial Dysfunction* (Dykens JA and Will Y, editors), Wiley.
77. Hartman JH*, Kozal JS, Di Giulio RT, **Meyer JN**. **2017**. Zebrafish have an ethanol-inducible hepatic 4-nitrophenol hydroxylase that is not CYP2E1-like. *Environmental Toxicology and Pharmacology* 54:142-145. PMID: in progress.
76. Luz AL, Godebo TR, Smith LL, Leuthner T, Kubik LL, **Meyer JN***. **2017**. Deficiencies in mitochondrial dynamics sensitize *Caenorhabditis elegans* to arsenite and other mitochondrial toxicants by reducing mitochondrial adaptability. *Toxicology* 387: 81-94. PMID: PMC5535741.
75. Hartman JH*, Miller GP, **Meyer JN**. **2017**. Toxicological implications of mitochondrial localization of CYP2E1. *Toxicology Research* 6: 273-289. PMID: in progress.
74. Weinstein JR, Asteria-Peñaloza R, Diaz-Artiga A, Davila G, Ryde IT, Hammond SK, **Meyer JN**, Benowitz N, Thompson LM*. **2017**. Exposure to polycyclic aromatic hydrocarbons and volatile organic compounds among rural Guatemalan women cooking and heating with solid fuels. *International Journal of Hygiene and Environmental Health* 220: 726-735. PMID: PMC5474125.
73. Lewis JJ, Hollingsworth JW, Chartier R, Cooper EM, Foster WM, Gomes G, Kussin P, MacInnis J, Padhi B, Panigrahi P, Rodes C, Ryde IT, Singha A, Stapleton HM, Thornburg J, Young C, **Meyer JN**, Pattanayak SK*. **2017**. Biogas stoves reduce firewood use, household air pollution, and hospital visits in Odisha, India. *Environmental Science and Technology* 51: 560-569.
72. Wyatt LH, Luz AL, Ryde IT, Cao X, Maurer LL, Blawas AM†, Aballay A, Pan WKY, **Meyer JN***. **2017**. Effects of methyl and inorganic mercury on genome homeostasis and mitochondrial function in *Caenorhabditis elegans*. *DNA Repair* 52: 31-48. PMID: PMC5394729.
71. Luz AL, **Meyer JN***. **2016**. Effects of reduced mitochondrial DNA content on secondary mitochondrial toxicant exposure in *Caenorhabditis elegans*. *Mitochondrion* 30: 255-264. PMID: PMC5023498.
70. Santa-González GA, Gómez-Molina A, Arcos-Burgos M, **Meyer JN**, Camargo M*. **2016**. Distinct adaptive response to repeated exposure to hydrogen peroxide associated with upregulation of DNA repair genes and cell cycle arrest. *Redox Biology* 9: 124-133. PMID: PMC4971155.

69. Luz AL, Lagido C, Hirschey MD, **Meyer JN***. 2016. *In vivo* determination of mitochondrial function using luciferase-expressing *Caenorhabditis elegans*: contribution of oxidative phosphorylation, glycolysis, and fatty acid oxidation to toxicant-induced mitochondrial dysfunction. Current Protocols in Toxicology 69: 25.8.1-25.8.22. PMID: PMC5002950.
68. Luz AL, Godebo TR, Bhatt DP, Ilkayeva OR, Maurer LL, Hirschey MD, **Meyer JN***. 2016. Arsenite uncouples mitochondrial respiration and induces a Warburg-like effect in *Caenorhabditis elegans*. Toxicological Sciences 152: 349–362. PMID: PMC4960910. **Cover feature.**
67. Wyatt LH, Diringier SE, Rogers LA, Hsu-Kim H, Pan WKY, **Meyer JN***. 2016. Antagonistic growth effects of mercury and selenium in *Caenorhabditis elegans* are chemical species-dependent and do not depend on internal Hg/Se ratios. Environmental Science and Technology 50: 3256-64. PMID: PMC4964607.
66. Maurer LL*, **Meyer JN**. 2016. A systematic review of evidence for silver nanoparticle-induced mitochondrial toxicity. Environmental Science: Nano 3: 311-322.
65. Maurer LL, Yang X, Schindler AJ, Taggart RK, Jiang C, Hsu-Kim H, Sherwood DR, **Meyer JN***. 2016. Intracellular trafficking pathways in silver nanoparticle uptake and toxicity in *Caenorhabditis elegans*. Nanotoxicology 10: 831–835. PMID: PMC4864179.
64. Van Houten B*, Hunter SE, **Meyer JN**. 2016. Mitochondrial DNA damage induced autophagy, cell death, and disease. Frontiers in Bioscience 21: 42-54. PMID: PMC4750375.
63. González-Hunt CP, Rooney JP, Joglekar R, Anbalagan C, Ryde IT, **Meyer JN***. 2016. PCR-based analysis of mitochondrial DNA copy number, mitochondrial DNA damage, and nuclear DNA damage. Current Protocols in Toxicology 67: 20.11.1-20.11.25. PMID: PMC4928199.
62. Maurer LL, Ryde IT, Yang X, **Meyer JN***. 2015. *Caenorhabditis elegans* as a model for toxic effects of nanoparticles: lethality, growth, and reproduction. Current Protocols in Toxicology 66: 20.10.1-20.10.25.
61. Luz AL, Smith LL, Rooney JP, **Meyer JN***. 2015. Seahorse Xf(e) 24 Extracellular Flux Analyzer-based analysis of cellular respiration in *Caenorhabditis elegans*. Current Protocols in Toxicology 66: 25.7.1-25.7.15. PMID: PMC4632645.
60. Gorka DE, Osterberg JS, Gwin C, Colman BP, **Meyer J**, Bernhardt ES, Gunsch CK, Di Giulio RT, Liu J*. 2015. Reducing environmental toxicity of silver nanoparticles through shape control. Environmental Science and Technology 49: 10093–10098.
59. Robey RB*, Weisz J, Kuemmerle N, Salzberg AC, Berg A, Brown DG, Kubik L, Palorini R, Al-Mulla F, Al-Temaimi R, Colacci A, Mondello C, Raju J, Woodrick J, Scovassi AI, Singh N, Vaccari M, Roy R, Forte S, Memeo L, Salem HK, Amedei A, Hamid RA, Williams GP, Lowe L, **Meyer J**, Martin FL, Bisson WH, Chiaradonna F, Ryan EP. 2015. Metabolic reprogramming and dysregulated metabolism: Cause, consequence, and/or enabler of environmental carcinogenesis? Carcinogenesis 36 (S1): S203-S231. PMID: PMC4565609.
58. Luz AL, Rooney JP, Kubik LL, González-Hunt CP, Song DH, **Meyer JN***. 2015. Mitochondrial morphology and fundamental parameters of the mitochondrial respiratory chain are altered in *Caenorhabditis elegans* deficient in mitochondrial dynamics and homeostasis processes. PLoS ONE 10(6): e0130940. PMID: PMC4480853.
57. Bone AJ, Matson CW, Colman BP, Yang X, **Meyer JN**, Di Giulio RT*. 2015. Silver nanoparticle toxicity to Atlantic killifish (*Fundulus heteroclitus*) and *Caenorhabditis*

- elegans*: A comparison of mesocosm, microcosm and conventional laboratory studies. Environmental Toxicology and Chemistry 34: 275-282.
56. Jayasundara N, Van Tiem L, **Meyer JN**, Erwin K, Di Giulio RT*. **2015**. AHR2-mediated transcriptomic responses underlying the synergistic cardiac developmental toxicity of PAHs. Toxicological Sciences 143: 469-481. PMID: PMC4306723.
 55. Rooney JP, Ryde IT, Saunders LH, Howlett EH, Colton MD[†], Germ KE, Mayer GD, Greenamyre JT, **Meyer JN***. **2015**. PCR based determination of mitochondrial DNA copy number in multiple species. Methods in Molecular Biology: Mitochondrial Regulation: Methods and Protocols 1241: 23-38. PMID: PMC4312664.
 54. González-Hunt CP, Leung MCK, Bodhicharla RK, McKeever MG[†], Arrant AE, Margillo KM[†], Ryde IT, Cyr DD, Kosmaczewski SG, Hammarlund M, **Meyer JN***. **2014**. Exposure to mitochondrial genotoxins and dopaminergic neurodegeneration in adult *Caenorhabditis elegans*. PLoS ONE 9(12):e114459. PMID: PMC4259338.
 53. Shaughnessy DT, McAllister KA, Worth L Jr, Haugen AC, **Meyer JN**, Domann FE, Van Houten B, Mostoslavsky R, Bultman SJ, Baccarelli AA, Begley T, Sobol RW, Hirschey MD, Ideker T, Santos JH, Copeland WC, Tice RR, Balshaw DM, Tyson FL. **2014**. Mitochondria, energetics, epigenetics, and cellular responses to stress. Environmental Health Perspectives 122: 1271-1278. PMID: PMC4256704.
 52. Sendoel A, Maida S, Zheng X, Teo Y, Stergiou L, Rossi C-A, Subasic D, Pinto S, Kinchen JM, Shi M, Boettcher S, **Meyer JN**, Manz MG, Bano D, Hengartner MO*. **2014**. DEPDC1/LET-99 participates in an evolutionarily conserved pathway for anti-tubulin drug-induced apoptosis. Nature Cell Biology 16: 812-820.
 51. Rooney JP, Luz AL, González-Hunt CP, Bodhicharla R, Ryde IT, Anbalagan C, **Meyer JN***. **2014**. Effects of 5-fluoro-2'-deoxyuridine on mitochondrial biology in *Caenorhabditis elegans*. Experimental Gerontology 56: 69-76. PMID: PMC4048797.
 50. Levard C, Yang X, **Meyer JN**, Lowry GV*. **2014**. Response to Comment on "Sulfidation of Silver Nanoparticles: Natural Antidote to Their Toxicity." Environmental Science and Technology 48: 6051-6052.
 49. Choi J*, Tsyusko OV*, Unrine JM, Chatterjee N, Ahn J-M, Yang X, Thornton BL[†], Ryde IT, Starnes D, **Meyer JN***. **2014**. A micro-sized model for the *in vivo* studies of nanoparticle toxicity: What has *Caenorhabditis elegans* taught us? Environmental Chemistry 11: 227-246.
 48. Colton MD[†], Kwok KWH, Brandon JA[†], Warren IH[†], Ryde IT, Cooper EM, Hinton DE, Rittschof D, **Meyer JN***. **2014**. Developmental toxicity and DNA damage from exposure to parking lot runoff water in the Japanese medaka (*Oryzias latipes*). Marine Environmental Research 99: 117-124. PMID: PMC4309550.
 47. Bodhicharla R, Ryde IT, Prasad GL, **Meyer JN***. **2014**. The tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) induces mitochondrial and nuclear DNA damage in *Caenorhabditis elegans*. Environmental and Molecular Mutagenesis 55: 43-50.
 46. Ahn J-M, Eom H-J, Yang X, **Meyer JN**, Choi J*. **2014**. Oxidative DNA damage of bare and polyvinylpyrrolidone-coated silver nanoparticles in the nematode *Caenorhabditis elegans*. Chemosphere 108: 343-352.
 45. Yang X, Jiang C, Hsu-Kim H, Badireddy AR, Dykstra M, Wiesner MR, Hinton DE, **Meyer JN***. **2014**. Silver nanoparticle behavior, uptake, and toxicity in *Caenorhabditis elegans*: Effects of natural organic matter. Environmental Science and Technology 48: 3486-3495.
 44. Rand AA, Rooney JP, Butt CM, **Meyer JN**, Mabury SA*. **2014**. Cellular toxicity associated with exposure to perfluorinated carboxylates (PFCAs) and their metabolic precursors. Chemical Research in Toxicology 27: 42-50.

43. Furda A, Santos JH, **Meyer JN**, Van Houten B*. **2014**. Quantitative PCR-based measurement of nuclear and mitochondrial DNA damage and repair in mammalian cells. Methods in Molecular Biology: Molecular Toxicology Protocols 1105: 419-437. PMID: PMC4407362.
42. Levard C, Hotze EM, Colman BP, Dale AL, Truong L, Yang X, Bone AJ, Brown GE Jr, Tanguay RL, Di Giulio RT, Bernhardt ES, **Meyer JN**, Wiesner MR, Lowry GV*. **2013**. Sulfidation of silver nanoparticles: Natural antidote to their toxicity. Environmental Science and Technology 47: 13440-13448. PMID: PMC4019074.
41. Turner EA, Arnold MH, Kroeger GL, Thornton BL[†], **Meyer JN***. **2013**. The toxicity of mountaintop mining/valley fill-associated effluent results both from metal exposure and osmotic stress in *Caenorhabditis elegans*. PLoS ONE 8(9): e75329. PMID: PMC3774817.
40. Arnold MC, Badireddy AR, Wiesner MR, Di Giulio RT, **Meyer JN***. **2013**. Cerium oxide nanoparticles are more toxic than equimolar bulk cerium oxide in *Caenorhabditis elegans*. Archives of Environmental Contamination and Toxicology 65: 224-233.
39. **Meyer JN***, Leung MCK, Rooney JP, Sendoel A, Hengartner MO, Kisby GE, Bess AS. **2013**. Mitochondria as a target of environmental toxicants. Toxicological Sciences 134: 1-17. PMID: PMC3693132. **Cover feature.**
38. Leung MCK, Rooney JP, Ryde IT, Bernal AJ, Bess AS, Crocker TL, Ji AQ, **Meyer JN***. **2013**. Effects of early life exposure to ultraviolet C radiation on mitochondrial DNA content, transcription, ATP production, and oxygen consumption in developing *Caenorhabditis elegans*. BMC Pharmacology and Toxicology 14:9. PMID: PMC3621653.
37. Bess AS, Leung MCK, Ryde IT, Rooney JP, Hinton DE, **Meyer JN***. **2013**. Effects of mutations in mitochondrial dynamics-related genes on the mitochondrial response to ultraviolet C radiation in developing *Caenorhabditis elegans*. Worm 2(1): 1-7. PMID: PMC3670464.
36. Bess AS, Ryde IT, Hinton DE, **Meyer JN***. **2013**. UVC-induced mitochondrial degradation via autophagy correlates with mtDNA damage removal in primary human fibroblasts. Journal of Biochemical and Molecular Toxicology 27: 28-41. PMID: PMC3640456.
35. Hunter SE, Gustafson MA, Margillo KM[†], Lee SA[†], **Meyer JN***. **2012**. *In vivo* repair of alkylating and oxidative DNA damage in the mitochondrial and nuclear genomes of wild-type and glycosylase-deficient *Caenorhabditis elegans*. DNA Repair 11: 857-863. PMID: PMC3484215.
34. Brar SS, **Meyer JN**, Bortner C, Van Houten B, Martin WJ II*. **2012**. Mitochondrial DNA-depleted A549 cells are resistant to bleomycin. American Journal of Physiology - Lung Cellular and Molecular Physiology 303: L413-24. PMID: PMC3468425.
33. Kasiviswanathan R, Gustafson MA, Copeland WC, **Meyer JN***. **2012**. Human mitochondrial DNA polymerase γ exhibits potential for bypass and mutagenesis at UV-induced cyclobutane thymine dimers. The Journal of Biological Chemistry 287: 9222-9229. PMID: PMC3308766.
32. Bess AS, Crocker TL, Ryde IT, **Meyer JN***. **2012**. Mitochondrial dynamics and autophagy aid in removal of persistent mitochondrial DNA damage in *Caenorhabditis elegans*. Nucleic Acids Research 40: 7916-7931. PMID: PMC3439916.
31. Furda AM, Bess AS, **Meyer JN**, Van Houten B*. **2012**. Analysis of DNA damage and repair in nuclear and mitochondrial DNA of animal cells using quantitative PCR. *In Methods in Molecular Biology: DNA repair protocols* (Lotte Bjergbæk, editor). Volume 920: 111-132. Springer Science+Business Media New York, USA. PMID: PMC4422392.

30. Yang X, Gondikas A, Marinakos SM, Auffan M, Liu J, Hsu-Kim H, **Meyer JN***. 2012. The mechanism of silver nanoparticle toxicity is dependent on dissolved silver and surface coating in *Caenorhabditis elegans*. Environmental Science and Technology 46: 1119-1127.
29. Leung MCK, Goldstone JV, Boyd WA, Freedman JH, **Meyer JN***. 2010. *Caenorhabditis elegans* generates biologically relevant levels of genotoxic metabolites from aflatoxin B₁ but not benzo[a]pyrene *in vivo*. Toxicological Sciences 118: 444-453. PMID: PMC2984530.
28. **Meyer JN***, Lord CA, Yang X, Turner EA, Badireddy AR, Marinakos S, Chilkoti A, Wiesner MR, Auffan M. 2010. Intracellular uptake and associated toxicity of silver nanoparticles in *Caenorhabditis elegans*. Aquatic Toxicology 100:140-150.
27. Boamah E, Brekman A, Tomasz M, Myeku N, Figueiredo-Pereira M, Hunter S, **Meyer JN**, Bargonetti J*. 2010. DNA adducts of decarbamoyl mitomycin C efficiently kill cells with compromised p53 through proteasome-mediated degradation of Chk1. Chemical Research in Toxicology 23: 1151–1162. PMID: PMC2907727.
26. Kullman SW*, Mattingly CJ, **Meyer JN**, Whitehead A. 2010. Perspectives on informatics in toxicology. In A Textbook of Modern Toxicology, 4th edition (Ernest Hodgson, editor). John Wiley and Sons, Hoboken NJ. Pp 593-605.
25. Alexeyenko A, Wassenberg DM, Lobenhofer EK, Yen J, Sonnhammer ELL, Linney E, **Meyer JN***. 2010. Interactome-based analysis of the transcriptomic response to dioxin in developing zebrafish *Danio rerio*. PLoS ONE 5: e10465. PMID: PMC2864754.
24. Hunter SE, Jung D, Di Giulio RT, **Meyer JN***. 2010. The QPCR assay for analysis of mitochondrial DNA damage, repair, and relative copy number. Methods 51:444-451. PMID: PMC2912960.
23. **Meyer JN***. 2010. QPCR: A tool for analysis of mitochondrial and nuclear DNA damage in ecotoxicology. Ecotoxicology 19: 804-811. PMID: PMC2844971
22. Haugen AC, Di Prospero NA, Parker JS, Fannin RD, Chou J, **Meyer JN**, Halweg C, Collins JB, Durr A, Fischbeck K, Van Houten B*. 2010. Altered gene expression and DNA damage in peripheral blood cells from Friedreich's ataxia patients: cellular model of pathology. PLoS Genetics 6: e1000812. PMID: PMC2799513.
21. Boyd WA, Crocker TL, Rodriguez AM, Lehmann DW, Leung MC-K, Freedman JH, Van Houten B, and **Meyer JN***. 2010. Nucleotide excision repair is not detectably inducible, but is required for normal lifespan and growth, in genotoxin-stressed adult *Caenorhabditis elegans*. Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis 683: 57-67. PMID: PMC2799044.
20. Eischeid AC, **Meyer JN**, Linden KG*. 2009. UV disinfection of adenoviruses: molecular indications of DNA damage efficiency. Applied and Environmental Microbiology 75: 23-28. PMID: PMC2612207.
19. Jung D, Cho Y, **Meyer JN**, Di Giulio RT*. 2009. Adaptation of long-range, quantitative polymerase chain reaction as a sensitive assay of DNA damage in the environmental model, Atlantic killifish (*Fundulus heteroclitus*). Comparative Biochemistry and Physiology C Toxicology & Pharmacology 149:182-186. PMID: PMC2676791.
18. Leung MCK*, Williams PL, Benedetto A, Au C, Helmcke KJ, Aschner M, **Meyer JN**. 2008. *Caenorhabditis elegans*: an emerging model in biomedical and environmental toxicology. Toxicological Sciences 106: 5-28. PMID: PMC2563142.
17. Billiard SM, **Meyer JN**, Wassenberg DM, Hodson PV, and Di Giulio RT*. 2008. PAH developmental toxicity is not additive: toward a mechanistic understanding. Toxicological Sciences 105: 5-23. PMID: PMC2734299.

16. Di Giulio RT*, and **Meyer JN**. 2008. Reactive oxygen species and oxidative stress. *In The Toxicology of Fishes* (Di Giulio RT and Hinton DE, editors), Taylor and Francis, Washington, DC. Pp 273-324.
15. Burnett KG*, Bain LJ, Baldwin WS, Callard GV, Cohen S, Di Giulio RT, Evans DH, Gómez-Chiarri M, Hahn ME, Hoover CA, Karchner SI, Katoh F, MacLatchy DL, Marshall WS, **Meyer JN**, Nacci DE, Oleksiak MF, Rees BB, Singer TP, Stegeman JJ, Towle DW, Van Veld PA, Vogelbein WK, Whitehead A, Winn RN, Crawford DL. 2007. *Fundulus* as the Premier Teleost Model in Environmental Biology: Opportunities for New Insights Using Genomics. Comparative Biochemistry and Physiology, Part D Genomics and Proteomics 2: 257–286. PMID: PMC2128618.
14. **Meyer JN**, Boyd WA, Azzam GA†, Haugen AC, Freedman JF, and Van Houten B*. 2007. Decline of nucleotide excision repair capacity in aging *Caenorhabditis elegans*. Genome Biology 8: R70. PMID: PMC1929140.
13. Wielgus A, Chignell CF, Miller DS, Van Houten B, **Meyer J**, Hu D-N, and Roberts JE*. 2007. Phototoxicity in human retinal epithelial cells promoted by hypericin, a component of St. John's Wort. Photochemistry and Photobiology 83: 706-713. PMID: PMC2092452.
12. Chan SL, Santos JH, **Meyer JN**, Mandavilli BS, Cook DL Jr, McCash CL, Kissling G, Van Houten B, Copeland WC, Walker VE, Witt KL, and Bishop JB*. 2007. Mitochondrial toxicity in cardiomyocytes of CD-1 mice following perinatal exposure to AZT, 3TC, or AZT/3TC in combination. Environmental and Molecular Mutagenesis 48: 190-200.
11. Santos JH*, **Meyer JN**, and Van Houten B. 2006. Mitochondrial localization of telomerase as a determinant for hydrogen peroxide-induced mitochondrial DNA damage and apoptosis. Human Molecular Genetics 15: 1757-1768.
10. Santos JH, **Meyer JN**, Mandavilli BS, and Van Houten B*. 2006. Quantitative PCR-based measurement of nuclear and mitochondrial DNA damage and repair in mammalian cells. *In Methods in Molecular Biology: DNA repair protocols: Mammalian Systems*, 2nd edition (Daryl Henderson, editor). Volume 314: 183-199. Humana Press Inc., Totawa, NJ, USA.
9. Timme-Laragy AR*, **Meyer JN**, Waterland RA, and Di Giulio RT. 2005. Analysis of CpG methylation in the promoter region of the CYP1A gene in *Fundulus heteroclitus* from creosote-contaminated and reference sites. Comparative Biochemistry and Physiology C Toxicology & Pharmacology 141: 406-411.
8. **Meyer JN**, Volz DC, Freedman JF, and Di Giulio RT*. 2005. Differential display of hepatic mRNA from *Fundulus heteroclitus* inhabiting a Superfund estuary. Aquatic Toxicology 73: 327-341.
7. Santos JH, **Meyer JN**, Skorvaga M, Annab LA, and Van Houten B*. 2004. Mitochondrial hTERT exacerbates free radical-mediated mtDNA damage. Aging Cell 3: 399-411.
6. **Meyer JN**, Smith JD, Winston GW, and Di Giulio RT*. 2003. Antioxidant defenses in killifish (*Fundulus heteroclitus*) exposed to Superfund sediments and model prooxidants: short-term and heritable responses. Aquatic Toxicology 65: 377-395.
5. **Meyer JN**, Wassenberg DM, Karchner SI, Hahn ME, and Di Giulio RT*. 2003. Expression and inducibility of aryl hydrocarbon receptor pathway genes in wildcaught killifish (*Fundulus heteroclitus*) with different contaminant-exposure histories. Environmental Toxicology and Chemistry 22: 2337-2343.
4. **Meyer JN***, and Di Giulio RT. 2003. Heritable adaptation and associated fitness costs in killifish (*Fundulus heteroclitus*) inhabiting a contaminated estuary. Ecological Applications 13: 490-503.

3. **Meyer JN***, Nacci DE, and Di Giulio RT. **2002**. Cytochrome P4501A (CYP1A) in killifish (*Fundulus heteroclitus*): heritability of altered expression and relationship to survival in contaminated sediments. Toxicological Sciences 68: 69-81.
2. **Meyer J***, and Di Giulio R. **2002**. Patterns of heritability of decreased EROD activity and resistance to PCB 126-induced teratogenesis in laboratory-raised offspring of killifish (*Fundulus heteroclitus*) from a creosote-contaminated site in the Elizabeth River, VA, USA. Marine Environmental Research 54: 621-628.
1. Keller JM, **Meyer JN**, Mattie M, Augspurger T, Rau M, Dong J, and Levin E*. **1999/2000**. Assessment of immunotoxicology in wild populations: Review and recommendations. Reviews in Toxicology 3: 167-212.

Non-peer reviewed publications

8. **Meyer JN***, Simon AH[†], Umakanth K, Yang X. **2017**. Silver nanoparticles are in general more toxic to *C. elegans* than gold, copper, iron, titanium dioxide, zinc oxide, cerium oxide, and carbon-based nanoparticles. Worm Breeder's Gazette published online January 17.
7. Maurer LL, Jiang C, Hsu-Kim H, **Meyer JN***. **2017**. Analysis of mitochondrial sodium, magnesium, calcium, manganese, and iron in wild-type *C. elegans*. Worm Breeder's Gazette published online January 17.
6. Klionsky DJ* *et al.* **2016**. Guidelines for the use and interpretation of assays for monitoring autophagy (2nd edition). Autophagy 12: 1-222. PMID: PMC4835977.
5. **Meyer JN***, Francisco AB. **2013**. A call for fuller reporting of toxicity test data. Integrated Environmental Assessment and Management 9(2): 347-348.
4. Leung MCK, Bunker AD, Walsky RL, **Meyer JN***. **2013**. *In vivo* analysis of the ability of *Caenorhabditis elegans* to metabolize the human CYP3A and CYP1A2 diagnostic substrates testosterone and phenacetin. Worm Breeder's Gazette 19: 28.
3. **Meyer JN*** and Bess AS. **2012**. Involvement of autophagy and mitochondrial dynamics in determining the fate and effects of irreparable mitochondrial DNA damage. Autophagy punctum 8:1822-1823. PMID: PMC3541291.
2. **Meyer JN**, Van Houten, B. **2010**. Apparently normal DNA repair and transcript expression in the RB885 strain carrying an intronic deletion in the *xpc-1* gene. Worm Breeder's Gazette 18: 23.
1. **Meyer J**. **2000**. Adaptation to xenobiotics: multigenerational costs and benefits. SETAC Globe Newsletter 1: 41-42. Invited opinion article.

Selected national/international scientific society meeting presentations (1st/Senior author only; [†]undergraduate)

- Pan W, Feingold B, Weinhouse C, Ortiz E, Berky A, Diringler S, Wyatt L, Lana J, Morales A, Rojas E, Meier P, Frischtak H, Rogers L, Hare-Grogg J, **Meyer J**, Hsu-Kim H. **2017**. Mercury environmental and human health risk assessment provides science base for Peru's State of Emergency in Madre de Dios. Platform presentation. 13th International Conference on Mercury as a Global Pollutant. Providence, RI.
- Meyer JN**. **2017**. Roles of mitochondrial fusion, fission, and autophagy in response to environmental mitotoxicants. Poster presentation. United Mitochondrial Disease Foundation. Alexandria, VA.
- Hartman JH, Gordon KL, Sherwood DR, Laranjeiro R, Driscoll M, **Meyer JN**. **2017**. Exercise in *Caenorhabditis elegans* promotes mitochondrial maintenance and protects against chemical-induced mitotoxicity. Platform presentation. 21st International *C. elegans* meeting, Los Angeles, CA.

- Leuthner T, Luz AL, Waters T, **Meyer JN. 2017.** Persistent and transgenerational metabolic effects of developmental arsenic exposure in *C. elegans* deficient in electron transport chain proteins. Poster presentation. 21st International *C. elegans* meeting, Los Angeles, CA.
- Leuthner T, Luz AL, Waters T, **Meyer JN. 2017.** Persistent and transgenerational metabolic effects of developmental arsenic exposure in *C. elegans* deficient in electron transport chain proteins. Poster presentation. Society of Toxicology Annual Meeting, Baltimore, MD.
- Luz AL, Maurer L, Godebo T, **Meyer JN. 2017.** Deficiencies in mitochondrial fission and fusion sensitize *C. elegans* to arsenite-induced mitochondrial dysfunction. Platform presentation. Society of Toxicology Annual Meeting, Baltimore, MD.
- Smith LL, **Meyer JN. 2017.** Dopamine-mediated behaviors in the nematode *Caenorhabditis elegans*. Poster presentation. Society of Toxicology Annual Meeting, Baltimore, MD.
- Berky A, Ryde IT, Pan WK, **Meyer JN. 2016.** Epidemiological survey on mitochondrial DNA copy number And mitochondrial DNA damage in the Peruvian Amazon. Poster presentation, Environmental Mutagenesis and Genomics Society, Kansas City, MO.
- Joglekar R, Ryde IT, Murphy SK, **Meyer JN. 2016.** Rotenone-induced mitochondrial and nuclear DNA damage is reversed during PC12 cell differentiation. Poster presentation. Society of Toxicology Annual Meeting, New Orleans, LA.
- Smith LL, **Meyer JN. 2015.** Deficiencies in mitochondrial fission and fusion sensitize the nematode *Caenorhabditis elegans* to cisplatin-induced larval growth delays and alterations in mitochondrial DNA copy number. Poster presentation. Society of Toxicology Annual Meeting, New Orleans, LA.
- González-Hunt CP, Ryde IT, **Meyer JN. 2016.** Mitochondrial DNA damage and dysfunction and their effects on dopaminergic neurodegeneration after toxic insult in *pink-1* and *pdr-1* mutant strains of *Caenorhabditis elegans*. Poster presentation. Society of Toxicology Annual Meeting, New Orleans, LA.
- Luz AL, **Meyer JN. 2016.** Reduced mtDNA content sensitizes *Caenorhabditis elegans* to environmental mitotoxicants. Poster presentation. Society of Toxicology Annual Meeting, New Orleans, LA.
- Kubik LL, Jiang C, Song DH, Hsu-Kim H, **Meyer JN. 2016.** Silver Nanoparticles Cause Mitochondrial Toxicity in *C. elegans*. Poster presentation. Society of Toxicology Annual Meeting, New Orleans, LA.
- Meyer JN. 2016.** Long-term effects of early-life mitochondrial toxicity in the context of genetic deficiencies. Invited platform presentation. Society of Toxicology Annual Meeting, New Orleans, LA.
- Kubik LL, **Meyer JN. 2015.** Systematic Analysis of Silver Nanoparticle-Induced Mitochondrial Toxicity: Size-Specific and Coating-Specific Effects. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Salt Lake City, UT.
- Wyatt LH, Pan WK, **Meyer JN. 2015.** Genotoxic endpoints following mercury exposure examined in *Caenorhabditis elegans*. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Salt Lake City, UT.
- González-Hunt CP, Ryde IT, **Meyer JN. 2015.** Mitochondrial DNA damage and dysfunction and their effects on dopaminergic neurodegeneration after toxic insult in *pink-1* and *pdr-1* mutant strains of *Caenorhabditis elegans*. Poster presentation. Gordon Research Conference: Cellular & Molecular Mechanisms of Toxicity, Andover, NH.
- Smith LL, **Meyer JN. 2015.** Deficiencies in mitochondrial fission and fusion sensitize the nematode *Caenorhabditis elegans* to cisplatin-induced larval growth delays and

- alterations in mitochondrial DNA copy number. Poster presentation. Gordon Research Conference: Cellular & Molecular Mechanisms of Toxicity, Andover, NH.
- Rooney JP, Luz AL, Ryde IT, Bess AS, **Meyer JN. 2015.** Developmental mitochondrial DNA damage results in altered mitochondrial function later in life in *C. elegans*. Poster presentation. Society of Toxicology Annual Meeting, San Diego, CA.
- Luz AL, **Meyer JN. 2015.** Mitochondrial fission- and fusion-deficient *C. elegans* display hypersensitivity to environmental mitotoxicants. Poster presentation. Society of Toxicology Annual Meeting, San Diego, CA.
- Hall SM[†], González CP, **Meyer JN. 2015.** Effects of *fzo-1* and *drp-1* mutations on dopaminergic neurodegeneration in *Caenorhabditis elegans*. Poster presentation. Society of Toxicology Annual Meeting, San Diego, CA.
- Meyer JN. 2014.** Mechanisms of uptake and toxicity of silver nanoparticles in *Caenorhabditis elegans*. Platform presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Vancouver, BC, Canada.
- Luz AL, **Meyer JN. 2014.** Investigating genetic susceptibility to mitochondrial toxicity. Poster presentation. Society of Toxicology Annual Meeting, Phoenix, AZ.
- Yang X, Schindler A, Taggart R, Badireddy AR, Hsu-Kim H, Sherwood DR, Wiesner M, Hinton DE, **Meyer JN. 2014.** *In vivo* study of endocytosis and lysosome function in silver nanoparticle uptake and toxicity in *Caenorhabditis elegans*. Poster presentation. Society of Toxicology Annual Meeting, Phoenix, AZ.
- Rooney JP, Bodhicharla R, Bess AS, Leung MCK, Ryde IT, Ji AQ, **Meyer JN. 2014.** Developmental exposure to Ultraviolet C Radiation results in altered energy production later in life in *Caenorhabditis elegans*. 2014. Poster presentation. Society of Toxicology Annual Meeting, Phoenix, AZ.
- González CP, Ryde IT, **Meyer JN. 2014.** Mitochondrial DNA damage and dysfunction and their effects on dopaminergic neurodegeneration after chemical insult in *Caenorhabditis elegans*. Poster presentation. Society of Toxicology Annual Meeting, Phoenix, AZ.
- Turner EA, Donoghue LJ, Brock TJ, Hopkins CE, Meyer JN. 2014. Investigating mechanisms of mitochondrial DNA damage-mediated developmental arrest. Poster presentation. Society of Toxicology Annual Meeting, Phoenix, AZ. March 23-27.
- Luz AL, Rooney JP, González CP, **Meyer JN. 2014.** Investigating genetic susceptibility to arsenite-induced mitochondrial toxicity. Poster presentation. NIEHS/SRP meeting, NIEHS, RTP, NC.
- Yang Y, Badireddy AR, Taggart R, Hsu-Kim H, Wiesner M, Hinton DE, **Meyer JN. 2013.** Intracellular trafficking and toxicity of silver nanoparticles in *Caenorhabditis elegans*. Platform presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Nashville, TN.
- Meyer JN**, Luz AL, Bess AS, Leung MCK, Bodhicharla R, González CP, Ryde IT, Ji AQ, Rooney JP. **2013.** Delayed effects of early-life exposure to irreparable mtDNA damage in *Caenorhabditis elegans*. Poster presentation. Environmental Mutagenesis and Genomics Society, Monterey, CA.
- Meyer JN. 2013.** Fate and consequences of persistent mitochondrial DNA damage. Platform and poster presentations. Gordon Research Conference: Cellular & Molecular Mechanisms of Toxicity, Andover, NH.
- Rooney JP, Bodhicharla R, Bess AS, Leung MCK, Ryde IT, Ji AQ, **Meyer JN. 2013.** Developmental exposure to Ultraviolet C Radiation results in altered energy production later in life in *Caenorhabditis elegans*. Poster presentation. 19th International *C. elegans* meeting, Los Angeles, CA.
- Bodhicharla R, Prasad GL, **Meyer JN. 2013.** The tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) induces mitochondrial and

- nuclear DNA damage in *Caenorhabditis elegans*. Poster presentation. 19th International *C. elegans* meeting, Los Angeles, CA.
- Rooney JP, Bodhicharla R, Bess AS, Leung MCK, Ryde IT, Ji AQ, **Meyer JN. 2013**. Developmental exposure to Ultraviolet C Radiation results in altered energy production later in life in *Caenorhabditis elegans*. Poster presentation. United Mitochondrial Disease Foundation meeting, Newport Beach, CA.
- González CP, Bodhicharla R, **Meyer JN. 2013**. Mutations in *pink-1* and *pdr-1* result in reduced dopaminergic neurodegeneration after chemical insult in *Caenorhabditis elegans*. Poster presentation. Society of Toxicology Annual Meeting, San Antonio, TX.
- Bodhicharla R, Prasad GL, **Meyer JN. 2013**. The tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) induces mitochondrial and nuclear DNA damage in *Caenorhabditis elegans*. Poster presentation. Society of Toxicology Annual Meeting, San Antonio, TX.
- Meyer JN**, Leung MCK, Rooney JP, Ji AQ, Ryde IT, Bess AS. **2012**. Mitochondrial DNA as a target of environmental toxicants. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Long Beach, CA.
- Yang X, Badireddy AR, Jiang C, Hsu-Kim H, Wiesner MR, Hinton DE, **Meyer JN. 2012**. Interactions of silver nanoparticles with natural organic matter and temperature in *Caenorhabditis elegans*. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Long Beach, CA.
- Yang X, Jiang C, Hsu-Kim H, Badireddy AR, Wiesner MR, Hinton DE, **Meyer JN. 2012**. In vivo study of the role of endocytosis in silver nanoparticle uptake localization, and toxicity in *Caenorhabditis elegans*. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Long Beach, CA.
- Turner EA, Arnold MC, Kroeger GL, **Meyer JN. 2012**. Assessing the mechanisms of toxicity in mountaintop removal/valley fill coal mining-affected watershed samples using a *Caenorhabditis elegans* bioassay. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Long Beach, CA.
- Meyer JN. 2012**. Silver nanoparticle toxicity in *Caenorhabditis elegans*. Poster presentation. European Society of Environmental Toxicology and Chemistry Annual Meeting, Berlin, Germany.
- Meyer JN. 2012**. Later-life effects of early-life mitochondrial DNA damage. Poster presentation. European Society of Environmental Toxicology and Chemistry Annual Meeting, Berlin, Germany.
- Bess AS, Crocker TL, Ryde I, **Meyer JN. 2011**. Mitochondrial dynamics and autophagy aid in removal of persistent mitochondrial DNA damage. Poster presentation, North American Society of Environmental Toxicology and Chemistry Annual Meeting, Boston, MA.
- Leung MCK, Goldstone JV, Boyd WA, Freedman JH, **Meyer JN. 2011**. DNA Damage from aflatoxin B₁ but not benzo[a]pyrene in *Caenorhabditis elegans*: a case study of evolution of genotoxicity. Platform presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Boston, MA.
- Yang X, Gondikas A, Auffan M, Hsu-Kim H, **Meyer JN. 2011**. Silver nanoparticle toxicity is dependent on dissolution and mitigated by natural organic matter in *Caenorhabditis elegans*. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Boston, MA.
- Bess AS, Crocker TL, Ryde IT, **Meyer JN. 2011**. Mitochondrial dynamics and autophagy aid in removal of persistent mitochondrial DNA damage. Poster presentation, Environmental Mutagen Society Annual Meeting, Montreal, Quebec, October 15-19.

- Kasiviswanathan R, Gustafson MA, Copeland WC, **Meyer JN. 2011.** Human mitochondrial DNA polymerase γ exhibits potential for bypass and mutagenesis at UV-induced cyclobutane thymine dimers. Poster presentation, Environmental Mutagen Society Annual Meeting, Montreal, Quebec, October 15-19.
- Meyer JN. 2011.** Mitochondrial dynamics as a new pathway for the removal of damaged DNA. Platform presentation. Mitochondrial Medicine 2011 Symposium, Schaumburg, IL.
- Yang X, Gondikas A, Auffan M, Hsu-Kim H, **Meyer JN. 2011.** The mechanism of silver nanoparticle toxicity is dependent on size and surface coating in *Caenorhabditis elegans*. Poster presentation. ICEIN Meeting, Durham, NC.
- Meyer JN. 2011.** The roles of mitochondrial fusion, fission, and autophagy in removing damaged mitochondrial DNA. Platform presentation. Society of Toxicology Annual Meeting, Washington, DC.
- Arnold MC, Badireddy AR, Auffan M, Wiesner MR, Di Giulio RT, **Meyer JN. 2010.** Physical and toxicological study on cerium oxide nanoparticles in *Caenorhabditis elegans*. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Portland, OR.
- Yang X, Lord CA, Badireddy AR, Auffan M, Wiesner MR, **Meyer JN. 2010.** Intracellular uptake and mechanisms of toxicity of silver nanoparticles in the nematode *Caenorhabditis elegans*. Platform presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Portland, OR.
- Turner EA, Kroger GL, Miranda ML, **Meyer JN. 2010.** Development of a bioassay using *Caenorhabditis elegans* to assess the environmental impact of mountaintop removal/valley fill coal mining. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Portland, OR.
- Meyer JN**, Bess AS, Leung MCK, Smith AM, McKeever MG[†], Margillo KM[†], Crocker TL. **2010.** Sources, fate and consequences of persistent mitochondrial DNA damage. Platform presentation (session chair). North American Society of Environmental Toxicology and Chemistry Annual Meeting, Portland, OR.
- Bess AS, Crocker TL, **Meyer JN. 2010.** Mitochondrial fusion and autophagy aid in removal of helix-distorting mitochondrial DNA damage. Poster presentation. Environmental Mutagen Society Annual Meeting, Fort Worth, TX.
- Meyer JN**, Jung D, Di Giulio RT. **2010.** Quantifying Mitochondrial and Nuclear DNA Damage in Sentinel Species. Invited Platform Presentation. Environmental Mutagen Society Annual Meeting, Fort Worth, TX.
- Meyer JN. 2010.** Desarrollo y uso del ensayo QPCR para daño al ADN nuclear y mitocondrial (2-day short course). XI Congreso Colombiano de Genética Humana, Medellín, Colombia.
- Meyer JN. 2010.** Destino y efectos del daño persistente al ADN mitocondrial. Invited plenary presentation. XI Congreso Colombiano de Genética Humana, Medellín Colombia.
- Smith AM, Crocker TL, Leung MCK, **Meyer JN. 2010.** Mitochondrial fusion and autophagy aid in removal of persistent mitochondrial DNA damage. Platform presentation, Society of Toxicology Annual Meeting, Salt Lake City, UT.
- Leung MCK, Arrant AE, Smith AM, McKeever M[†], Margillo KM[†], Crocker TL, **Meyer JN. 2010.** Mitochondrial genotoxicity during development leads to dopaminergic neurodegeneration in adult *Caenorhabditis elegans*. Poster presentation, Society of Toxicology Annual Meeting, Salt Lake City, UT.
- Meyer JN**, Auffan M, Wiener MR, Lord CA. **2009** Silver nanoparticles inhibit growth in *Caenorhabditis elegans*. Platform presentation, ICEIN 2009 International Conference

on the Environmental Implications of NanoTechnology, Howard University, Washington, DC.

- Meyer JN. 2009.** Interactomes and their applications in toxicology. Platform presentation (session chair). Society of Toxicology Annual Meeting, Baltimore, Maryland.
- Leung MCK, McKeever M[†], Berkowitz A[†], Boyd WA, Bunger A, Freedman JH, Walsky RL, Stapleton HM, **Meyer JN. 2009.** Environmental mutagenesis and cytochrome P450 activities in the nematode *Caenorhabditis elegans*. Poster presentation. Society of Toxicology Annual Meeting, Baltimore, MD.
- Smith AM, Leung MCK, Arrant A, Bernal A, Crocker TL, **Meyer JN. 2009.** Removal of bulky DNA adducts following ultraviolet radiation exposure involves mitochondrial fusion and autophagy. Poster presentation. Society of Toxicology Annual Meeting, Baltimore, Maryland, MD.
- Meyer JN, Arrant AE, Bernal AJ, Leung MCK, Crocker TL. 2008.** Bulky mitochondrial DNA adducts cause developmental arrest and are handled via a process involving mitochondrial fusion and autophagy in the model organism *Caenorhabditis elegans*. Platform presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Tampa, FL.
- Leung MCK, Boyd WA, Bunger A, Rice JR, Freedman JH, Walsky RL, Stapleton HM, **Meyer JN. 2008.** Characterization of cytochrome P450 activities in the nematode *Caenorhabditis elegans*. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Tampa, FL.
- Meyer JN, Arrant AE, Bernal AJ, Leung MCK, Crocker TL. 2008.** The Use of *C. elegans* to study mitochondrial DNA damage, fusion/fission events and autophagy. Invited platform presentation. Environmental Mutagen Society Annual Meeting, Puerto Rico.
- Boyd WA, Crocker TL, Rodriguez AM, Leung MCK, Lehmann DW, Freedman JH, Van Houten B, **Meyer JN. 2008.** Growth arrest, DNA repair, and transcriptomic response to DNA damage in *Caenorhabditis elegans*. Poster presentation. Society of Toxicology Annual Meeting, Seattle, WA.
- Meyer JN, Wassenberg DM, Lobenhofer EK, Sonnhammer ELL, Linney E, Alexeyenko A. 2008.** Interactome-based analysis of the transcriptomic response to dioxin in developing zebrafish. Poster presentation, Aquatic Animal Models of Human Disease Conference, Durham, NC.
- Meyer JN, Boyd WA, Lehmann DW, Haugen AC, Freedman JH, and Van Houten, B. 2007.** Nucleotide excision repair is required for normal lifespan and growth in genotoxin-stressed adult *Caenorhabditis elegans*. Poster presentation, 16th International *C. elegans* meeting, Los Angeles, CA.
- Meyer JN, Boyd WA, Azzam GA[†], Haugen AC, Freedman JH, and Van Houten B. 2006.** Genotoxicity and age-related differences in nucleotide excision repair following UVC exposure in *Caenorhabditis elegans*. Platform presentation. Environmental Mutagen Society Annual Meeting, Vancouver, BC.
- Meyer JN, Boyd WA, Azzam GA[†], Haugen AC, Freedman JH, and Van Houten B. 2006.** Altered homeostatic networks and decreased nucleotide excision repair in aging *Caenorhabditis elegans*. Poster presentation. 2nd Interactome Networks meeting (Cold Spring Harbor Laboratory/Wellcome Trust), Hinxton, UK.
- Meyer JN, Boyd WA, Freedman JH, and Van Houten B. 2005.** DNA damage formation and removal in aging, repair-deficient, or frataxin-deficient *Caenorhabditis elegans*. Poster presentation. 15th International *C. elegans* meeting, Los Angeles, CA.
- Meyer JN, Boyd WA, Haugen AC, Freedman JH, Van Houten B. 2004.** A *Caenorhabditis elegans* model of Friedreich's ataxia shows iron sensitivity, mitochondrial DNA damage, and altered gene expression. Poster presentation. Environmental Mutagen Society Annual Meeting, Pittsburgh, PA.

- Meyer JN**, Volz DC, Freedman JH, and Di Giulio RT. **2003**. Differential display of hepatic mRNA from *Fundulus heteroclitus* inhabiting a Superfund estuary. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Austin, TX.
- Meyer JN**, Timme AR, Waterland RA, Powell WH, Karchner SI, Hahn ME, and Di Giulio RT. **2003**. Analysis of CpG methylation in the promoter region of the CYP1A gene in *Fundulus heteroclitus* from creosote-contaminated and reference sites. Platform presentation. Pollutant Responses in Marine Organisms 12th International Symposium. Safety Harbor, FL, USA.
- Meyer JN**, Smith JD, Winston GW, and Di Giulio RT. **2002**. Antioxidant defenses in killifish (*Fundulus heteroclitus*) exposed to Superfund sediments: short-term and evolutionary responses. Poster presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Salt Lake City, UT.
- Meyer JN** and Di Giulio RT. **2002**. Nongenetic heritability of an altered cytochrome P451A phenotype in killifish (*Fundulus heteroclitus*) from a contaminated site. Poster presentation. Developmental Toxicology in the 21st Century: Multidisciplinary Approaches using Model Organisms and Genomics. NIEHS, Research Triangle Park, NC.
- Meyer JN** and Di Giulio RT. **2001**. Mechanisms of adaptation in F₁ and F₂ offspring of wild-caught killifish (*Fundulus heteroclitus*) from a contaminated site. Platform presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Baltimore, MD.
- Meyer JN** and Di Giulio RT. **2001**. Mechanisms of adaptation and fitness costs in F₁ and F₂ offspring of wild-caught killifish (*Fundulus heteroclitus*) from a contaminated site. Platform presentation, Pollutant Responses in Marine Organisms 11th International Symposium. Plymouth, United Kingdom.
- Meyer JN** and Di Giulio RT. **2001**. Adaptations in a population of killifish inhabiting a polluted estuary: mechanisms, fitness costs, and genetic consequences. Platform presentation. Office of Naval Research Harbor Processes Review. Washington, DC.
- Meyer JN** and Di Giulio RT. **2000**. Mechanisms of adaptation and fitness costs in F₁ and F₂ offspring of wild-caught killifish (*Fundulus heteroclitus*) from a contaminated site. Platform presentation. North American Society of Environmental Toxicology and Chemistry Annual Meeting, Nashville, TN.
- Meyer JN**, MacLean ED, Di Giulio RT. **1999**. Measures of fitness in F₁ and F₂ offspring of wild-caught mummichog (*Fundulus heteroclitus*) from a contaminated site. Platform presentation, North American Society of Environmental Toxicology and Chemistry Annual Meeting, Philadelphia, PA.
- Meyer JN**, MacLean ED, Di Giulio RT. **1999**. Increased sensitivity to oxidative stress in a creosote-adapted population of mummichog (*Fundulus heteroclitus*). Poster presentation. Pollutant Responses in Marine Organisms 10th International Symposium. Williamsburg, VA.

Other presentations

2017: North Carolina Society of Toxicology

2016: University of Washington Department of Biochemistry, RTP180, Duke Tumor Biology Group Retreat, ONES Awardee Symposium, Genetics and Environmental Mutagenesis Society, Institut Ciència de Materials de Barcelona

2015: National Toxicology Program, Rutgers University Graduate School of Biomedical Sciences, Agency for Toxic Substances and Disease Registry, Duke Cancer

- Institute/ITEHP Symposium, Cancer Control and Population Sciences Seminar Series (Duke Cancer Institute), NC State Department of Toxicology
- 2014:** Duke Interdisciplinary Mitochondrial Colloquium, ONES Awardee Symposium, Carolina Science Café, Duke Center for DNA and Genome Stability, National Academy of Sciences Arab American Frontiers Program, Duke Megatrends presentation
- 2013:** US EPA (RTP), Clemson University; NIEHS, Duke ITEHP Symposium, ONES Awardee Symposium
- 2012:** Belmont University Annual Environmental Science Lecture, Duke ITEHP Symposium, OneHealth course lecture, Leibniz Research Institute for Environmental Medicine, NIA Laboratory of Molecular Gerontology, ONES Awardee Symposium
- 2011:** ECU Biology, Baylor University Biology, NIEHS DERT, Duke ITEHP Seminar Series, Duke ITEHP Symposium, Duke Aging Colloquium
- 2010:** Asociación Colombiana de Genética Humana workshop and presentation
- 2009:** US EPA (RTP), Duke Center for DNA and Genome Stability
- 2008:** UNC DNA Repair Focus Group, NC State Toxicology, NIEHS Laboratory of Molecular Genetics

Teaching

University graduate (at Duke University)

Environmental Health (ENV537): 2009, 2011-2014. Co-instructor.

Environmental Toxicology (ENV501): 2005, 2007- 2016. Co-Instructor or Instructor.

Mechanisms in Toxicology (ENV819): 2008, 2011, 2015, 2017. Instructor.

University undergraduate (at Duke University)

Introduction to Environmental Science and Policy (ENV102): 2007-2017. Instructor.

Environmental Chemistry and Toxicology (ENV360): 2008 - 2017. Co-Instructor.

Integrating Environmental Science and Policy (ENV201): 2006, Co-Instructor; 2-3 malaria module lectures, 2007-2014.

Middle School and High School (at Colegio de Estudios Avanzados "José Martí," Quetzaltenango, Guatemala.)

English (Middle School and High School): 1994-1997. Program Director and Instructor.

Biology (High School): 1996. Instructor.

Service activities

Journal peer reviewer: Aquatic Toxicology (7), Archives of Environmental Contamination and Chemistry (1), Biochemical Pharmacology (2), Biology Methods & Protocols (1), BBA-Gene Regulatory Mechanisms (1), BMC Biology (1), BMC Pharmacology & Toxicology (3), Cell Death and Disease (1), Cellular and Molecular Biology (1), Chemical Reviews in Toxicology (1), Chemico-Biological Interactions (2), Chemosphere (5), Comparative Biochemistry and Physiology (4), Diabetes/Metabolism Research and Reviews (1), DNA Repair (6), Ecotoxicology (3), Ecotoxicology and Environmental Safety (4), Ecotoxicology and Molecular Mutagenesis (3), EMBO Journal (1), Environmental Health Perspectives (1), Environment International (1), Environmental and Molecular Mutagenesis (8), Environmental Pollution (2), Environmental Science and Technology (7), Environmental Toxicology (3), Environmental Toxicology and Chemistry (3),

Environmental Toxicology and Pharmacology (2), Experimental Gerontology (2), Food and Chemical Toxicology (1), Genome Research (1), Genomics (1), Journal of Agricultural and Food Chemistry (1), Journal of Applied Microbiology (1), The Journal of Biological Chemistry (1), Journal of Experimental Biology (1), Journal of Gerontology (1), Journal of Visualized Experiments (1), Marine Environmental Research (1), Mechanisms of Ageing and Development (1), Methods (1), Mitochondrion (2), Molecular Carcinogenesis (1), Mutation Research (1), Nanomedicine (1), Nanotoxicology (7), Nature Nanotechnology (1), Neurotoxicology (3), Neurotoxicology and Teratology (4), Nucleic Acids Research (2), PLoS Genetics (1), PLoS ONE (14), Radiation Oncology (1), Science of the Total Environment (1), Scientific Reports (1), Toxicological Sciences (17), Toxicology (7), Toxicology Letters (1).

Editorial Board, BMC Pharmacology and Toxicology (2012-2017), DNA Repair (2013-present), Environmental and Molecular Mutagenesis (2013-present), Korean Journal of Environmental Health and Toxicology (2011-present).

Scientific Society Service: Councilor to the Board of Directors, Genetics and Environmental Mutagenesis Society 2007-2010; Councilor, Molecular and Systems Biology Specialty Section, Society of Toxicology (2013-2015); Awards and Honors Committee (2012-2014), Publications Committee (2014-present), and Councilor (2016-present), Environmental Mutagenesis and Genomics Society.

Grant reviews: Banco de la República (Colombia, 1), Biotechnology and Biological Sciences Research Council (UK, 2), Environment and Health Fund (Israel, 1), Medical Research Council National Centre for the Replacement, Refinement and Reduction of Animals in Research (UK, 1), Maine Water Resources Institute (1), NIEHS SBIR (1), NIEHS Special Emphasis/Specialty (8), NSF (1), Netherlands Organization for Scientific Research (1), NOMDS (1).

Director of Graduate Studies, ENV (PhD) program, 2013-present.

Research Mentoring

Undergraduate students: Greg Azzam (NCSU, 2007); Kiersten Bell (Duke, 2018); Avery Berkowitz (NSOE, 2010); Meryl Colton (NSOE, 2011); Audrey Dinyari (UNC, 2017); Lauren Donoghue (UNC, 2014); Laura Guidera (Duke, 2018); Samantha Hall (Biology/NSOE, 2015); Victoria Harms (Baylor University, 2018); Jamie Harris (Duke, 2019); Jina Kim (NSOE, 2013); Madeleine McKeever (Biology, 2009); Kathleen Margillo (NSOE, 2011); Audrey Hagopian (NSOE, 2014); Sean Lee (Biology, 2011); Brittany Lila Thornton (NSOE, 2013); Alex Simon (Virginia Tech, 2013); Tanner Waters (NSOE, 2018).

Master's students: Emily Buenger (NSOE, MS, 2013); Christina Chao (Global Health, MS, 2015); Genna Gomes (NSOE, MEM, 2015); Alexander Kliminsky (NSOE, MEM, 2016); Kara Koehn (NSOE, MEM, 2009); Sharon Luong (NSOE, MEM, 2010); Krithika Umakanth (NSOE, MEM, 2011); Katherine Stencel (NSOE, MS, 2015).

*Doctoral students (major advisor; * indicates joint advising)*: Amanda Bess (NSOE, 2012); Claudia González (NSOE, 2017); Rashmi Joglekar* (NSOE, 2019); Maxwell Leung (NSOE, 2012); Tess Leuthner (NSOE, 2019); Jessica Lewis* (NSOE, 2015); Anthony Luz (NSOE, 2017); John Rooney (NSOE, 2015); Latasha Smith (NSOE and Pharmacology and Cancer Biology, 2018); Lauren Wyatt* (NSOE, 2017); Xinyu Yang (NSOE, 2014).

Doctoral students (thesis committee): Christina Arnaout (Civil and Environmental Engineering/Pratt, 2013); Audrey Bone (NSOE, 2015); Autumn Bernal (University Program in Genetics and Genomics, 2012); Daniel Brown (NSOE, 2015); Xiou Cao

(Molecular Genetics and Microbiology, 2017); Elizabeth Chan (Immunology, 2014); Bryan Clark (NSOE, 2011); Xiaoxing Cui (NSOE, 2017); Lauren Czaplicki (Civil and Environmental Engineering/Pratt, 2018); Drew Day (NSOE, 2017); Anne Eischeid (Civil and Environmental Engineering/Pratt, 2009); Tara Essock-Burns (NSOE, 2015); Carrie Fleming (NSOE, 2010); Dawoon Jung (NSOE, 2009); Jordan Kozal (NSOE, 2018); Christopher Leonetti (NSOE, Duke University, 2016); Casey Lindberg (NSOE, 2020); Laura Macaulay (NSOE, 2015); Priyaanka Nanduri (Pharmacology and Cancer Biology, 2015); Pam Noyes (NSOE, 2011); Ashley Parks (Civil and Environmental Engineering/Pratt, 2013); Allison Phillips (NSOE, 2019); Simon Roberts (NSOE, 2014); Matt Ruis (NSOE, 2021); Lindsey Van Tiem (NSOE, 2011); Jerry Yen (Microbiology and Genetics, 2012).

Post-graduate researchers: Rakesh Bodhicharla (2011-2013); Jessica Hartman (2016-present); Kirsten Helmcke (2010); Senyene Eno Hunter (2009-2010); Laura (Kubik) Maurer (2014-2016); Danielle Ferraz Mello Trevisan (2017-present).

Visiting scholars: Jinhee Choi (2010-2011; University of Seoul, South Korea), Gloria Santos Gonzáles (2013; Universidad de Antioquia, Colombia), Silvia Maglioni (2015; IUF- Leibniz Research Institute for Environmental Medicine, Germany), Lesly Tejada Benítez (2012 and 2016; Universidad de Cartagena, Colombia), Lam Van Giang (2011; Vietnam National University, Vietnam).