



Joel Meyer



Associate Professor of  
Environmental Toxicology

Postdoctoral training 2003-  
2006

National Institute of  
Environmental Health Sciences,  
RTP, NC

Doctor of Philosophy 2003

Duke University, Durham, NC

Bachelor of Science 1992

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### Environmental Toxicology

#### Research emphasis:

Dr. Meyer studies the effects of genotoxic agents on human and wildlife health. He is interested in understanding the mechanisms by which environmental agents cause DNA damage, the molecular processes that organisms employ to protect prevent and repair DNA damage, and genetic differences that may lead to increased or decreased sensitivity to DNA damage. Mitochondrial DNA damage and repair are a particular focus. He studies DNA repair and other responses to DNA damage via PCR-based analysis of DNA damage and repair, genomic and systems biology approaches, and organismal-level responses.

#### Selected publications: (

Luz, AL, Godebo, TR, Bhatt, DP, Ilkayeva, OR, Maurer, LL, Hirschey, MD, and Meyer, JN. The Cover: Arsenite Uncouples Mitochondrial Respiration and Induces a Warburg-like Effect in *Caenorhabditis elegans*." *Toxicological sciences* : an official journal of the Society of Toxicology 152, no. 2 (August 2016): 349-362.

González-Hunt, CP, Leung, MC, Bodhicharla, RK, McKeever, MG, Arrant, AE, Margillo, KM, Ryde, IT, Cyr, DD, Kosmaczewski, SG, Hammarlund, M, and Meyer, JN. Exposure" to mitochondrial genotoxins and dopaminergic neurodegeneration in *Caenorhabditis elegans*." 9, no. 12 (January 2014): e114459-

Meyer, JN, Leung, MCK, Rooney, JP, Sandoel, A, Hengartner, MO, Kisby, GE, and Bess, AS. "Mitochondria as a target of environmental toxicants." *Toxicological Science* 134, no. 1 (2013): 1-17.

Bess, AS, Crocker, TL, Ryde, IT, and Meyer, JN. "Mitochondrial dynamics and autophagy aid in removal of persistent mitochondrial DNA damage in *Caenorhabditis elegans*." *Nucleic Acids Research* 40, no. 16 (2012): 7916-7931.

#### Application:

- Environmental Toxicology
- Mitochondria and Mitochondrial DNA
- Nanomaterials
- *Caenorhabditis elegans*

#### Collaboration potential:

- DNA repair to DNA damage via PCR-base analysis
- Genomics and system biology approaches
- Mitochondrial function and dysfunction