

**Jessica LaRocca, Ph.D.**  
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## Summary of Qualifications

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- Group leader of cross-functional team of Mammalian Toxicologists, Molecular and Cellular Biologists, and *In Vitro* Platform Scientists.
- Experienced leading scientific regulatory strategy for Discovery small molecule development as Regulatory Science Team Leader.
- Experienced as toxicology Subject Matter Expert for Discovery, Development, and Renewal small molecule plant protection products.
- Embraces working both independently and as a member of a highly collaborative group team, including Discovery project teams.

## Education

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**Brown University** 2008- 2012  
 Ph.D. in Pathobiology

- Thesis: The Role of *Akt1* in Mammary Gland Development and Cancer

**University of Connecticut** 2004-2008  
 B.S. in Environmental Biochemistry; Honors: Honors Scholar, Cum Laude

## Experience

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### ***Corteva Agriscience (previously Dow AgroSciences)***

*Corteva Agriscience is a global company committed to increasing crop productivity.*

Group Leader, *Predictive Human Health Sciences* 2021-current

- Group leader of cross-functional team of Discovery Mammalian Toxicologists, Molecular and Cellular Biologists, and *In Vitro* Platform Scientists.
- Accountable for *in vitro* toxicology lab that focuses on Discovery Toxicology high-throughput screening and customized mechanistic toxicology testing.
- Lead the development of new approach methodologies for predictive toxicology.
- Lead and facilitate internal cross-functional and external collaborations that foster the advancement of predictive safety assessment capability in mammalian toxicology.
- VP-elect SOT MSBSS Specialty Section.
- 2023 Discussion Leader CMMT Gordon Research Conference.

Research Toxicologist and Regulatory Science Team Leader, *Predictive Safety Center* 2019-2021

- Technical leader for *in vitro* and *in silico* predictive toxicology testing strategy for the Predictive Safety Center.
- Responsible for cross-functional regulatory sciences strategy for Discovery small molecule development.
- Regulatory Sciences Representative on Discovery Assessment Teams
- Experienced with implementation of predictive toxicity approaches, including *in vitro* 3D spheroid, organ-on-a-chip, hepatotoxicity, endocrine screening, high content screening, and toxicogenomics.

Associate Research Toxicologist, *Predictive Safety Center* 2016-2019

- Responsible for the design mammalian of *in vitro* anAsd *in vivo* mammalian toxicity testing strategy and candidate selection for Discovery pipeline molecules.
- Communicates different styles of reports and presentations that are tailored to convey complex ideas to specific external audiences.

Senior Toxicologist, *Human Health Assessment* 2014-2016

- Global subject matter expert in toxicology for Development and Renewal small molecule plant protection products.
- Responsible for knowledge and delivery of regulatory needs and requirements.
- Study sponsor representative for GLP OECD guideline mammalian toxicology studies, including DART, genotoxicity, and general toxicology.
- Experienced with global dossier submissions for plant protection products.
- Conducted targeted mode of action and human relevance framework experiments.
- Experienced with interfacing with government agencies.

**Harvard University** 2012-2014  
*The Michels Lab focuses on epigenetic epidemiology and epigenome-wide association studies.*  
 Postdoctoral Fellow, *Joint appointment with Harvard University Center for the Environment and Brigham and Women's Hospital*

- Research focused on epigenetic epidemiology and endocrine disrupting chemicals (EDCs).
- Identified how prenatal exposure to several EDCs in humans can influence the epigenome of the placenta, including DNA methylation and miRNAs. Identified specific genetic and epigenetic perturbations associated with gestational diabetes.
- Major laboratory techniques used included bisulfite pyrosequencing, miRNA qRT-PCR, allele-specific expression, and nucleic acid isolation.
- Collaborated with a biostatistician and genomics core facilities on several projects utilizing microarrays. Established collaboration with external university investigators.
- Successfully awarded two internal grants as the primary investigator and assisted with writing NIH grants and manuscripts.

**Brown University** 2008- 2012  
*The Hixon Lab focuses on reproductive and developmental toxicity of exposure to environmental chemicals utilizing in vivo and in vitro models.*  
 Graduate Student, *Department of Pathobiology*

- Research focused on developmental biology of the testis, ovary, and mammary gland, and reproductive and developmental toxicology of Bisphenol A.
- Identified the functional role of the proto-oncogene *Akt1* in postnatal mammary gland development and DMBA exposure-induced mammary cancer development. Also identified molecular mechanisms on how prenatal exposure to the endocrine disrupting chemical BPA elicits adverse reproductive and developmental outcome on male and female offspring.
- Major techniques used included transgenic rodent models, *in vitro* cell culture, mammary gland whole mounts, qRT-PCR, immunohistochemistry, immunofluorescence, mammalian toxicology, statistical analyses, and apoptotic, cell cycle, proliferation and differentiation assays.

**UConn Office of Environmental Policy** 2006-2008  
 Intern

- Responsible for initiating individual projects regarding sustainability and promoting a green campus as well as assisting with other intern projects, coordinating meetings, and various other responsibilities.
- Also organized, directed and promoted the first Eco-Madness conservation contest in the University's residence halls.

### ***Rhode Island Department of Health Women's Cancer Screening Program***

2006

#### Intern

- Responsible for researching scholarly articles regarding women's experiences with breast and/or cervical cancer. Used this information to draft an epidemiology survey for the WCSP.

### **Awards and Honors**

- (2021) Regulatory and Stewardship Scientific Excellence Award. Corteva AgriScience.
- (2020) Regulatory and Stewardship Scientific Excellence Award. Corteva AgriScience.
- (2019) Early Career Scientist Achievement Award. Corteva Agriscience.
- (2016) RSRA Team Innovation Award PSC *in vitro* Toxicogenomics and Metabolite ID Assay Team. Dow AgroSciences.
- (2013) Postdoctoral Travel Award. Harvard FAS Postdoctoral Association.
- (2012) Honorable Mention Molecular Biology SS Graduate Student Research Award. Society of Toxicology.
- (2012) Graduate Student Travel Award. Society of Toxicology.
- (2011) Best Student Presentation at the Northeast Regional Chapter 2011 Fall Meeting.
- (2011) Wilson Presentation Award. Teratology Society 2011 Annual Meeting.
- (2011) James C. Bradford Memorial Poster Award. Teratology Society 2011 Annual Meeting.
- (2011) Student Travel Award. Teratology Society Student Travel Award. Teratology Society 2011 Annual Meeting.
- (2011) 1<sup>st</sup> Place Student Abstract Travel Award. NESOT Student Travel Award for the Society of Toxicology 2011 Annual Meeting.

### **Publications**

- Weaver J, Odanga J, Wolf K, Piekos S, Biven M, Taub M, LaRocca J, Thomas C, Byer-Alcorace A, Chen J, Lee JB, LeCluyse EL. "The morphology, functionality, and longevity of a novel all human hepatic cell-based tri-culture system." *Toxicol In Vitro* 2023
- Becker A, Bianchi B, LaRocca J, Marty MS, Mehta J. "Identifying the landscape of developmental toxicity new approach methodologies." *Birth Defects Res* 2022
- Johnson K et al, LaRocca J, and Petit S. "A Transformative Vision for an Omics-Based Regulatory Chemical Testing Paradigm." *Toxicol Sci* 2022
- Lynea M, LeBaron M, Johnson J, Rasoulpour R, LaRocca J. "Bridging sex-specific differences in the CAR-mediated hepatocarcinogenesis of nitrapyrin using molecular and apical endpoints." *Frontiers in Toxicology*. 2021
- LaRocca J, Costa E, Sriram S, Hannas B, Johnson K. "Short-term toxicogenomics as an alternative approach to chronic *in vivo* studies for derivation of points of departure: A case study in the rat with a triazole fungicide." *Regul Toxicol Pharmacol*. 2020

- [LaRocca J](#), Johnson K, LeBaron M, Rasoulpour R. “The Interface of Epigenetics and Toxicology in Product Safety Assessment.” *Current Opinion in Toxicology*. 2017
- [LaRocca J](#), Rasoulpour R, Gollapudi B, Eisenbrandt D, Murphy L, LeBaron M. “Integration of novel approaches demonstrates simultaneous metabolic inactivation and CAR-mediated hepatocarcinogenesis of a nitrification inhibitor.” *Toxicology Reports*. 2017
- [LaRocca J](#), Binder A, McElrath T, Michels KB. “First-Trimester Urine Concentrations of Phthalate Metabolites and Phenols and Placenta miRNA Expression in a Cohort of U.S. Women.” *Environ Health Perspect*. 2015 Jun 19.
- Binder A, [LaRocca J](#), Lessur C, Marsit C, Michels KB. “Epigenome-wide and transcriptome-wide analyses reveal gestational diabetes is associated with alterations in the human leukocyte antigen complex.” *Clin Epigenetics*. 2015
- Binder A, [LaRocca J](#), McElrath T, Michels KB. “The Impact of First Trimester Phthalate and Phenol Exposure on *IGF2/H19* Genomic Imprinting and Birth Outcomes.” *Environ Res*. 2014
- Cheng S, Don J, Pang Y, [LaRocca J](#), Hixon M, Thomas P, Filardo EJ. “Anatomical location and redistribution of G protein-coupled estrogen receptor-1 during the estrus cycle in mouse kidney and specific binding to estrogens but not aldosterone.” *Mol Cell Endocrinol*. 2013
- [LaRocca J](#), Pietruska J, and Hixon ML. “*Akt1* is essential for postnatal mammary gland development, function, and the expression of *Btn1a1*.” *PLOS ONE* 2011
- [LaRocca J](#), Boyajian A, Brown C, Smith SD, and Hixon M. “Effects of *In Utero* Exposure to Bisphenol A or Diethylstilbestrol on the Adult Male Reproductive System” *Birth Defects Res B Dev Reprod Toxicol*. 2011
- Nelson, HH, Almquist, LM, [LaRocca, JL](#), Plaza, SL, Lambert-Messerlian, G, Sugarbaker, DJ, Bueno, R, Godleski, JJ, Marsit, CM, Christensen, BC, Kelsey, KT. “The relationship between tumor MSLN methylation and serum mesothelin (SMRP) in mesothelioma.” *Epigenetics*. 2011
- Brown C, [LaRocca J](#), Ota M, Anderson L, Smith SD, Weston P, Rasoulpour T, and Hixon ML. “Subfertility caused by altered follicular development and oocyte growth in female mice lacking PKB/Akt1.” *Biol Reprod*. 2010

### Book Chapters

- (2016) [LaRocca, J.](#), Johnson, K., Hannas B., Marty, S., Zabloutny, C., Ball, N., and Andrus, A. Use of Developmental and Reproductive Toxicity Studies for Chemical Registration. *Methods in Pharmacology and Toxicology*.

### Recent and Upcoming Platform Presentations

- (2021) “Integration of in vitro and aquatic embryo models to predict direct and indirect thyroid toxicity modes of action” Society of Toxicology Annual Meeting. Virtual March 2020
- (2018) “Integration of in vitro and in silico models for predictive toxicology in discovery molecule development.” Society of Toxicology Annual Meeting. San Antonio, Texas. March 14.
- (2016) “Integration of relevant carcinogenicity and endocrine data in a systemic approach establishes the MoA for pronamide-induced thyroid tumors” Society of Toxicology Annual Meeting. New Orleans, Louisiana. March 14.
- (2016) “Epigenetics Primer” TRAC, Cincinnati, Ohio. April 4
- (2016) “Characterization of Murine Hepatocarcinogenesis Induced by the Nitrification Inhibitor Nitrapyrin: Mode of Action, Human Relevance Framework and Risk Assessment

Implications” Society of Toxicology Risk Assessment (RASS) Specialty Section Webinar Series, Virtual Webinar. February 10.

- (2015) “CAR Activation as the Mode of Action for Nitrapyrin-Induced Mouse Liver Tumors” Society of Toxicology Annual Meeting. San Diego, California. March 24.
  - (2015) “What are reproductive toxicity guideline studies? Why are they conducted? What can they achieve? Where are the gaps?” ECETOC Epigenetics Workshop. Brussels, Belgium. November 12.
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