

# Mark Simmers | Curriculum Vitae

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## Professional Summary

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PhD candidate with results-driven research experience in epigenetic and mechanistic studies. Experienced in *in vivo* and *in vitro* experimental design, development, and analysis. Relevant experience includes heavy metal exposure and its developmental effects on imprinting and epigenetic profiles. Experienced in teaching and training both undergraduate and graduate levels of molecular biology. Proficient in the creation of professional materials for both academic and commercial purposes.

## Education

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### PhD in Molecular and Cellular Toxicology

North Carolina State University, Raleigh, NC

Anticipated Graduation: Fall 2022

Advisor: Dr. Michael Cowley | Dissertation: Epigenetic dysregulation of imprinted genes in cadmium-induced fetal growth restriction

### Bachelor of Science in Biological Science | Concentration in Human Biology

North Carolina State University, Raleigh, NC

2017

### Bachelor of Computer Science

Coleman College, San Marcos, CA

2006

## Summary of Experience

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### Graduate Research Assistant

2017 to Present

Department of Biological Sciences, NCSU

Conducted *in vivo* and *in vitro* exposure studies detailing the developmental effects of Cadmium on imprinted genes and fetal growth restriction. Responsibilities include collection and purification of biological materials; optimization of protocols for transcriptional, translational, and epigenetic analysis; preparation of results for both publication and presentation formats; as well as mentorship, teaching, and training of undergraduate and graduate students.

### Freelance Web Developer and Graphic Designer

2007 to Present

Managed, developed, and implemented online campaigns for multiple professional clients. Responsibilities included database management and industry branding including newsletter, website, and logo design as well as social media and search engine optimization and website maintenance.

### Undergraduate Research Assistant

2016 - 2017

Used enrichment cultures utilizing diverse inoculate to isolate and characterize bacterial strains in terms of basic morphological and histological properties. Identified growth kinetics and substrate oxidation pathways using gas chromatography and optical densitometric techniques.

## Teaching Experience

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### Graduate Teaching Assistant

Department of Biological Sciences, NCSU

2017 to Present

- Guest Lecturer – GEN 441/541: Human and Biomedical Genetics
- Guest Lecturer – GEN 456: Epigenetics, Development, and Disease

Center for Human Health and the Environment, NCSU

2019

- Environmental Health Research Experiences for Teachers in High-Poverty Schools

Palomar College, San Marcos, CA

- Supplemental Instructor – ZOO 200: Human Anatomy

2014

## Peer-Reviewed Publications

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1. *Simmers, M., Hudson, K., Baptissart, M., Cowley, M.* Epigenetic control of the imprinted growth regulator *Cdkn1c* in cadmium induced placental dysfunction. *Epigenetics*. 2022. *In Review*.
2. *Simmers, M., Cowley, M.* Placental activation of LncRNA *Tuna* in response to Cadmium exposure and its association with placental insufficiency and fetal growth restriction. 2022. *In preparation*.

## Honors and Awards

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### Third Place Student Presentation Award

*Genetics and Mutagenesis Society of North Carolina Annual Meeting* 2021

### First Place Student Poster Award

*38<sup>th</sup> Annual Meeting of the Mountain West Society of Toxicology* 2020

## First Authored Presentations

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- North Carolina Society of Toxicology Annual Meeting 2021
- Genetics and Mutagenesis Society of North Carolina Annual Meeting 2021
- North Carolina State University – Toxicology Seminar Series 2021
- Society of Toxicology Annual Meeting and ToxExpo 2021
- 38<sup>th</sup> Annual Meeting of the Mountain West Society of Toxicology 2020
- North Carolina Society of Toxicology Annual Meeting 2020
- Genomic Imprinting – From Biology to Disease – International Virtual Meeting 2020
- Genetics and Mutagenesis Society of North Carolina 2020
- North Carolina Society of Toxicology Annual Meeting 2019
- North Carolina State University Genetics Retreat 2019
- Genetics and Mutagenesis Society of North Carolina 2019
- North Carolina Society of Toxicology Annual Meeting 2018
- North Carolina State University Genetics Retreat 2018
- Genetics and Mutagenesis Society of North Carolina 2018

## Professional Development

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### Teaching and Communication Certificate

*North Carolina State University* 2021

### Workshops

*North Carolina State University* 2017 - Present

- How to Deliver a Job Talk
- How to Manage Conflict in the Classroom
- How to Process Your Course Evaluations
- Question, Persuade & Refer – Suicide Prevention Training
- Professional Portfolio Design
- Structuring Content: Lesson, Course, and Curriculum Design.

## Technical Skills

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*Animal care, mating, tissue collection, nucleic acid isolation and purification, PCR, qRT-PCR, western blot, bisulfite cloning, pyrosequencing, tissue sectioning and histology, in situ hybridization, cell culture.*  
*Software: Microsoft office, Prism, Galaxy, Adobe Creative Suite.*