

# Jessica Milano Foster

## CURRENT ADDRESS

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## OBJECTIVE

To further my education in science and pursue a career in biomedical research

## EDUCATION

Master of Science in Pathology and Laboratory Medicine.

Completed thesis entitled "*Epigenetic regulation of human trophoblast syncytialization by histone demethylase LSD1*".

University of Kansas Medical Center, Kansas City, KS, 2016.

Bachelor of Science in Chemistry; Minor in Forensic Science.

Truman State University, Kirksville, MO, 2014.

## GRADUATE COURSEWORK

Endocrinology  
Reprod Biology  
Cellular Structure  
Research Ethics  
Pathology Journal Club

Gamete & Embryo Dev  
Proteins & Metabolism  
Cell Communication  
Biographics  
Seminar in Pathology

Reprod Biology Seminar  
Molecular Genetics  
Biomedical Research I/II  
Grant Writing  
Research in Pathology

## UNDERGRADUATE COURSEWORK

Quantitative Analysis w/lab  
Instrumental Analysis w/lab  
Calculus I/II/III  
Physics I/II  
Physics Lab I/II

Organic Chemistry I/II  
Organic Chemistry Lab  
Adv. Organic Chemistry  
Biochemistry I  
Biochemistry Lab I

Physical Chemistry I/II  
Physical Chemistry Lab I/II  
Inorganic Chemistry  
Inorganic Chemistry Lab  
ANOVA/Experimental Design

## PROFESSIONAL EXPERIENCE

University of Missouri, Columbia, MO  
PhD Student

2018-current

Dr. Laura Schulz and Dr. R. Michael Robert's Laboratory

- Independent research encompassing mitochondrial dysfunction in early onset preeclampsia
- Cell culture including HESC, iPSC, PE derived iPSC

Dr. Tom Spencer's Laboratory (August 2018- August 2019)

- Independent research involving neonatal and postnatal uterine development
- TA for two undergraduate animal science seminar courses

University of Missouri, Columbia, MO 2017-2018  
Research Specialist I

- Assisting graduate student with various on-going projects
- Managing several mouse lines
- Independent research involving ESR1 in the uterine epithelium

University of Kansas Medical Center, Kansas City, KS 2015-2016  
Graduate Research Assistant, Dr. Soumen Paul's Laboratory

- Independent research involving regulation of human trophoblast syncytialization
- Assisted senior lab members with various on-going projects
- Assisted with writing and editing manuscripts and grant proposals

University of Kansas Medical Center, Kansas City, KS 2014  
Laboratory Assistant; proficient in:

- Basic pathology laboratory techniques
- Basic research involving epigenetic signaling in human cells and placenta tissue
- Collection, analysis and interpretation

Truman State University, Kirksville, MO 2013-2016  
Private Tutor

- Sought out and hired by students who needed extra help
- Led weekly private sessions with students requiring assistance in Organic Chemistry I, Organic Chemistry II and Biochemistry
- Improved personal academic and teaching abilities as well as the students' performance in course work

University of Kansas Medical Center, Kansas City, KS 2013  
Student Worker

- Assisted in research involving epigenetic signaling in mouse trophoblast cells
- Assisted in professional laboratory management

Truman State University, Kirksville, MO 2012-2013  
Teaching Assistant

- Teaching Assistant for General Chemistry Lab for three semesters
- Teaching Assistant for Organic Chemistry Lab for one semester
- Enforced lab safety rules along OSHA guidelines and university policy
- Taught students appropriate lab techniques and relevant chemical concepts
- Graded laboratory reports and other course work, including exams and final exams

## **VOLUNTEER EXPERIENCE**

Truman State University, Kirksville, MO 2013-2014

Group Tutor

- Co-tutored small groups of students in chemistry with the organization Alpha Chi Sigma
- Extended regular tutoring hours for those in need of extra time

### **LAB SKILLS & EQUIPMENT**

Chemistry:

Infrared Spectrometer, Gas Chromatograph, Calorimeter, pH meter, Spectronic 20, Atomic Absorption Spectrometer, H NMR, Carbon NMR, UV-Vis Spectrometer, High Performance Liquid Chromatography column, Capillary Electrophoresis, Cary 50 Spectrometer, Solution Calorimeter, Bomb Calorimeter, Crystal Purification systems, Schlenk Line Apparatus, Rotary Evaporator, Gel Electrophoresis

Molecular Biology:

Real Time PCR, Western Blotting, X-ray film development, DNA and RNA synthesis and purification, H&E, Immunohistochemistry, Immunofluorescence, Fluorescence Microscope, Laser Capture Microdissection, Frozen and Paraffin tissue processing and sectioning, Plasmid preparation and Lentiviral Transduction, RNA In Situ Hybridization, Chromatin Immunoprecipitation

Cell Culture:

Human Trophoblast, BeWo, Human Cytotrophoblast Isolation and culture, Mouse Embryonic Fibroblast, Mouse Trophoblast Stem cell, Human endometrial organoids, Human Embryonic Stem cells, Induced Pluripotent Stem cells

Animal Science

Various mouse handling and collection techniques, Sheep surgical technician, Sheep anesthesiologist

### **RESEARCH EXPERIENCE**

PhD Student research, Mitochondrial dysfunction in early onset preeclampsia. University of Missouri-Columbia, MO 2019-Current.

PhD Student research, Ontogeny of FOXA2 and ESR1 in neonatal and postnatal uterine development. Ovarian influence on postnatal mouse uterine development. University of Missouri-Columbia, MO 2018-2019.

Research Specialist I, Role of ESR1 in uterine epithelium. University of Missouri, Columbia, MO 2017-2018.

Master's Thesis, Epigenetic regulation of human trophoblast syncytialization by histone demethylase LSD1. University of Kansas Medical Center, Kansas City, KS, 2015-2016.

Laboratory Assistant, Epigenetic regulation of trophoblast syncytialization. University of Kansas Medical Center, Kansas City, KS, 2014.

Student Research, Literature research on the chemistry of epilepsy. Truman State University Independent Study Course, Kirksville, MO, 2014.

Student Research, Epigenetic modifications in trophoblast stem cells- Histone methylation. University of Kansas Medical Center, Kansas City, KS, 2013.

### **PRESENTATION EXPERIENCE**

SSR Poster Presentation, Ovarian influence on postnatal mouse uterine development. Society for the Study of Reproduction Annual Meeting, San Jose, CA, July 20, 2019.

3<sup>rd</sup> Place Winner Grad Forum Poster Presentation and Competition, Ovarian influence on postnatal mouse uterine development. University of Missouri-Columbia, MO, May 22, 2019.

SSR Poster Presentation, Decreased *Esr1* expression in uterine epithelium leads to subfertility and dystocia. Society for the Study of Reproduction Annual Meeting, New Orleans, LA, July 12, 2018.

MS Thesis defense, Epigenetic regulation of human trophoblast syncytialization by histone demethylase LSD1. University of Kansas Medical Center, Kansas City, KS, August 22, 2016.

Student Presenter, LSD1 regulates trophoblast syncytialization via a Gata2-dependent pathway. University of Kansas Medical Center Seminar in Pathology, Kansas City, KS, 2016.

Student Research Forum Oral Presentation and Competition, LSD1 regulates trophoblast syncytialization via a Gata2-dependent pathway. University of Kansas Medical Center, Kansas City, KS, 2016.

Student Research Forum 3 Minute Thesis Competition, LSD1 regulates trophoblast syncytialization via a Gata2-dependent pathway. University of Kansas Medical Center, Kansas City, KS, 2016.

Pathology Research Day Poster Presentation and Competition, LSD1 regulates trophoblast syncytialization via a Gata2-dependent pathway. University of Kansas Medical Center, Kansas City, KS, 2016.

Greenwald Symposium Poster Presentation and Competition, LSD1 regulates trophoblast syncytialization via a Gata2-dependent pathway. University of Kansas Medical Center, Kansas City, KS, 2015.

Student Presenter, Epigenetic regulation of human trophoblast syncytialization. University of Kansas Medical Center Seminar in Pathology, Kansas City, KS, 2015.

Student Presenter, "The Chemistry of Epilepsy". Truman State University Independent Study Course, Kirksville, MO, 2014.

Student Presenter, "The Pharmacodynamics of Ginsenosides". Truman State University Junior Chemistry Seminar, Kirksville, MO, 2012.

### **PEER REVIEWED PUBLICATIONS**

Jessica Milano-Foster, et. al. Regulation of human trophoblast syncytialization by histone demethylase LSD1. *J Biol Chem*. 2019 Oct 7.

Kumar RP, Jessica Milano-Foster (co-author), et.al. Regulation of energy metabolism during early mammalian development: TEAD4 controls mitochondrial transcription. *Development*. 2018 Oct 1.

Andrew Kelleher, Jessica Milano-Foster (co-author), et.al. Uterine glands coordinate on-time embryo implantation and impact endometrial decidualization for pregnancy success. *Nat Commun*. 2018 Jun 22.

Peng Wang, Jessica Milano-Foster (co-author), et.al. Generation of Mouse for Conditional Expression of Forkhead Box A2 (FOXA2). *Endocrinology*. 2018 Mar 13.

Pratik Home, Jessica Milano-Foster (co-author), et.al. Genetic redundancy of GATA factors in the extraembryonic trophoblast lineage ensures the progression of preimplantation and postimplantation mammalian development. *Development*. 2017 Mar 1; 144(5): 876-888.

### PROFESSIONAL MEMBERSHIP/AFFILIATIONS

Society for the Study of Reproduction- Trainee Member	2018-Present
Animal Science Graduate Student Association	2018-Present
American Chemical Society- Student Association, Kirksville, MO Treasurer	2013-Present
<ul style="list-style-type: none"> <li>• Maintained the budget for the organization</li> <li>• Collected membership dues and encouraged national membership at a discount</li> </ul>	
Social Chair	
<ul style="list-style-type: none"> <li>• Organized social events, such as picnics and volleyball tournaments, for the organization and other science organizations on campus</li> </ul>	
Alpha Chi Sigma, Gamma Theta Chapter, Kirksville, MO	2012-2014
<ul style="list-style-type: none"> <li>• Chemistry honors fraternity</li> <li>• Co-tutored small groups in chemistry</li> </ul>	
Happiness and Joy Chair	
<ul style="list-style-type: none"> <li>• Encouraged and maintained chapter morale through the perils of being a chemistry major</li> <li>• Awarded Brother of the Week to a member who performed an exceptional brotherly action</li> </ul>	
Phi Sigma Pi, Beta Chapter, Kirksville, MO	2011-2013
<ul style="list-style-type: none"> <li>• Co-ed national honors fraternity</li> <li>• Upheld the values of Scholarship, Leadership and Fellowship</li> </ul>	
Homecoming Chair	
<ul style="list-style-type: none"> <li>• Acted as the chapter liaison to the homecoming committee</li> <li>• Organized an event calendar and encouraged members to attend the homecoming events</li> <li>• Choreographed the lip-sync performance for the team including three other organizations</li> </ul>	
Truman State Showgirls Dance Team, Kirksville, MO	2010-2014
<ul style="list-style-type: none"> <li>• University dance team performing at all home football games, home women's basketball games and home men's basketball games</li> <li>• Performed at post-season tournament games</li> <li>• Performed at the semi-annual Truman Society of Dance Arts recital and other guest performances upon request</li> <li>• Made community appearances for school spirit events and promotions</li> <li>• Competed in Chicago, IL, St. Louis, MO and Kansas City, MO achieving First Place each time</li> </ul>	

### CERTIFICATIONS

American Chemical Society	2014-Present
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